

# COMMERCIAL REFRIGERATION & AIR CONDITIONING

FEBRUARY 1956

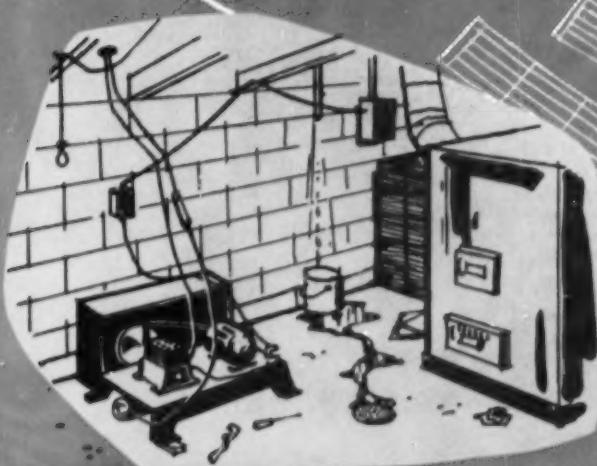


For other articles on food store refrigeration see pages 46, 48, 50, and 52

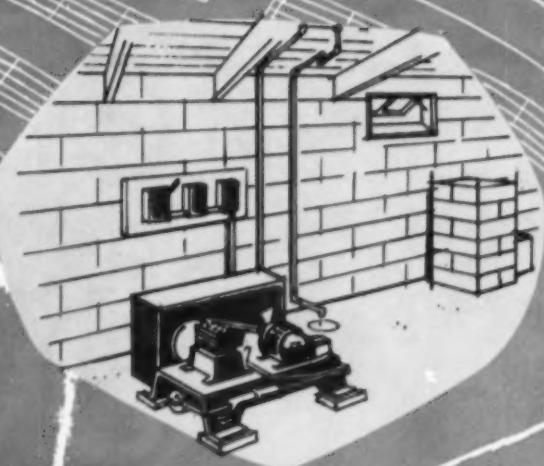
For articles on food store air conditioning see pages 95, 100

## Proper Mechanical Planning...

...the difference between food store jobs



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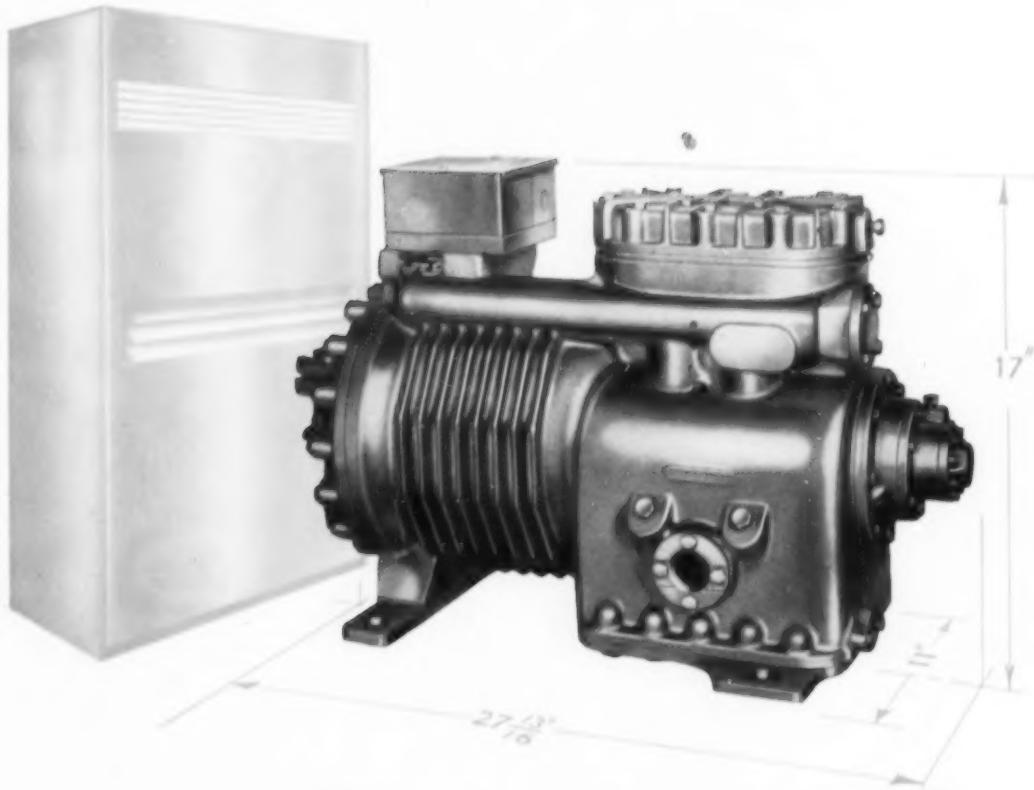
AND THIS

STEVE'S RICE  
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... see page 42

MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF  
AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT

# NEW... *Quiet, efficient, power-packed*



## 10 H.P. *Copelametic* FOR... PACKAGED AIR CONDITIONING

There was plenty of interest in this 10 H.P. Copelametic when we introduced it at the ARI Show in Atlantic City. Many features make it ideal for quality, packaged air conditioning.

The 10 H.P. Copelametic motor-compressor fits neatly into a compactly designed unit. For greater capacity, two motor-compressors can be installed for flexibility in operation.

Use of suction cooling and Freon-22 give the 10 H.P. Copelametic high capacities with low power input. As in

all time-proved Copelametics, belts, seals and manual oiling are eliminated. Being accessible, adjustments and parts replacement can be made on the spot with minimum loss of operating time.

Everything required in package air conditioning is featured in the 10 H.P. Copelametic. It is compact... rugged... efficient... quiet-running... accessible. It has the protection of positive lubrication.

A comprehensive, detailed engineering packet describing the 10 H.P. is available. **SEND FOR YOURS.**

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REFRIGERATION CORPORATION, Sidney, Ohio

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milk  
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ACCURATE TEMPERATURE  
CONTROL... INSTALL

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APPLICATION



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# The Complete Line... BUSH

## ... A BONUS TO REFRIGERATION CONTRACTORS

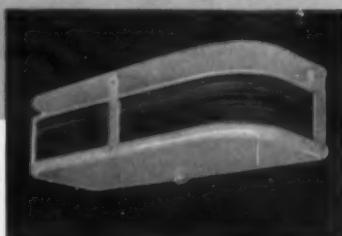
There's a BUSH unit for every commercial refrigeration need — high or low temperature. To service engineers and contractors this means a bonus in time saved "shopping" for the right unit . . . installation time saved by knowing the line . . . engineering costs shaved with the help of BUSH Sales Engineers who are always available to assist in selection and application.

There's a "peace-of-mind" bonus, also, in knowing that latest design, reliably-rated BUSH units cut down costly trouble calls.



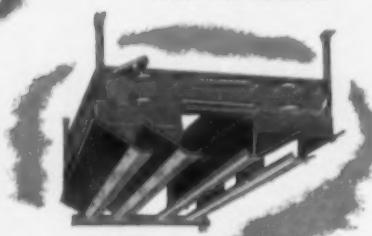
### BUSH 'JF' JET-FLO COOLER

Stainless steel casing. Completely non-ferrous construction throughout. Patented inner-fin coil design. Arranged for "suck-through" operation, but supplied with extra fan for "blow-through" arrangement. Units can be wall or ceiling mounted.



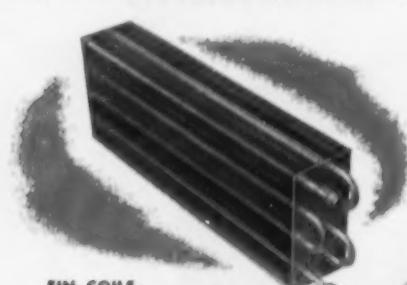
### BUSH 'WJ' UNIT COOLERS

For space-saving installation at juncture of wall and ceiling. Air circulation through 180° radius with no blast.

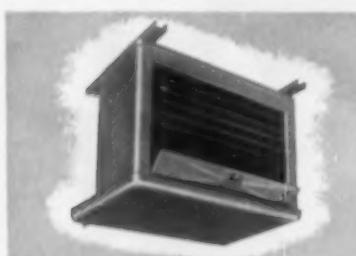


### BUSH PLASTI-COOLERS

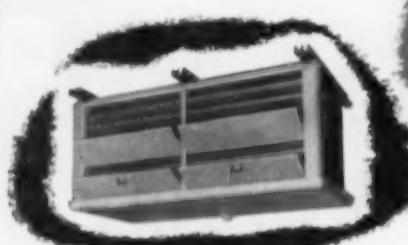
Jet black plastic baffles eliminate sweating. Baffles pitched for gentle, gravity-type air flow that provides maximum circulation without blast.



**FIN COILS**  
Wide range of types and sizes to meet diverse requirements. Aluminum fins on copper tubing. Copper Inner-Fins.



**'HG' HOT GAS DEFROST UNITS**  
**'ED' ELECTRIC DEFROST UNITS**  
Inner-fin coil construction permits rapid defrosting from the inside. No reboilers, complicated piping, other "extras".



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Product coolers featuring inner-fin coils that permit entirely separate defrosting circuit. Available in floor or ceiling models. Assembled defrost circuit kit supplied.

# BUSH

BUSH MANUFACTURING COMPANY • West Hartford 10, Conn.

RIVERSIDE • CALIFORNIA

# COMMERCIAL REFRIGERATION & AIR CONDITIONING

IN  
THIS  
ISSUE

FEBRUARY 1956 • VOLUME 13 • No. 2

## FEATURE ARTICLES

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48 **"NON-COMMERCIAL" DISPLAYS** . . . pay off in added equipment sales for this enterprising Denver fixture dealer. Here's how he makes good will pay dividends in cold cash.

50 **PUSH-THROUGH PRODUCE CASES** . . . simplify the restocking problems of this Alabama food market. Here's another example of how proper planning of refrigeration facilities pays off.

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52 **HOW TO FIGURE FREEZER SPACE** . . . for a wholesale food warehouse is a tricky problem. Here are some answers which should help you in selling installations of this type.

## Air Conditioning Section

95 **FOOD STORES: A-1 PROSPECTS FOR AIR CONDITIONING** . . . Modern food markets really need air conditioning. Here's a rundown of some of the sales points you can use in closing prospects in this field.

98 **BANK SAVES MONEY WITH HEAT PUMPS** . . . This progressive financial institution made its investment in air conditioning equipment pay real dividends.

100 **HOW TO SAVE FLOOR SPACE** . . . in food store air conditioning is exemplified by this Louisiana installation using a 35-ton system composed entirely of ceiling-mounted package units.

101 **HOW A "WEATHER FACTORY" WORKS** . . . A behind-the-scenes look at one of the air conditioning industry's most extensive research centers.

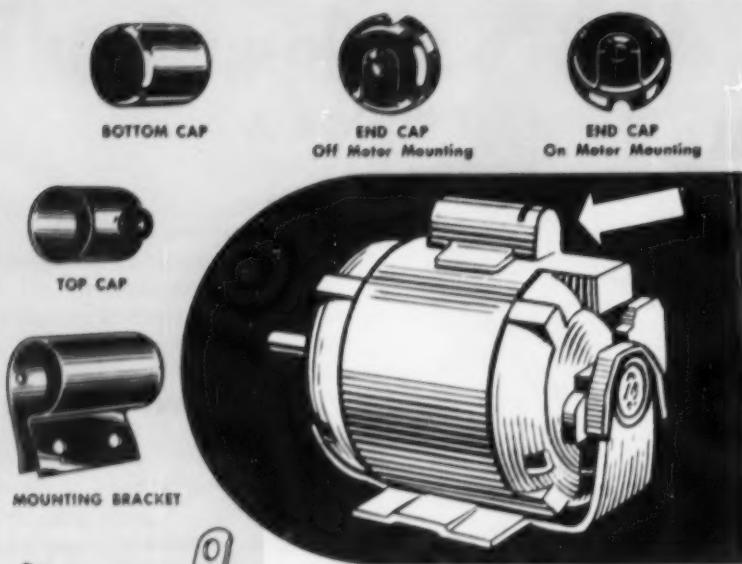
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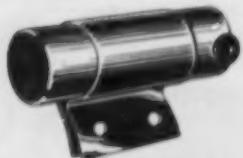
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Capacitor with end cap and  
snap-in mounting bracket



COMPLETE ASSEMBLY  
Top and bottom caps  
and mounting bracket



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# PROOF AGAIN! G-E Packaged Air Conditioner dealers climb higher in the business than anybody!



## NOW G-E CEILING-MOUNTED UNITS OPEN NEW MARKETS FOR BIGGEST PROFITS EVER

Matter of fact, G-E Packaged Air Conditioner dealers are climbing right up to the ceiling! Because new G-E units go up to the ceiling, too. They don't take a single foot of valuable floor space! They open new markets for the biggest profits ever — offices, factories, super markets, small shops and restaurants — banks, institutions and warehouses!

**Air-cooled and water-cooled models.** Where water is a serious problem, G-E air-cooled units, in 3 and 5 ton sizes, are an ideal answer... use no water, require only air and electricity. G-E water-cooled units are available in 3, 5 and 7½ ton sizes. All units may be equipped with heating coils for winter heating.

**All-in-one construction.** These models are entirely self-contained. No remotely located parts to cut efficiency or cause refrigerant leaks. Motor, compressor and condenser are sealed by

flame to keep dirt and moisture *out*, vital refrigerant and oil *in*. And each cooling system carries G.E.'s famous 5-year warranty, which includes a generous labor allowance and shipping costs.

**For full information** about the extra advantages of G-E Packaged Air Conditioners, call your nearest G-E distributor, or write: C. J. Rigby, General Electric Company, Commercial and Industrial Air Conditioning Dept., 5 Lawrence Street, Bloomfield, New Jersey.

## Packaged AIR CONDITIONERS

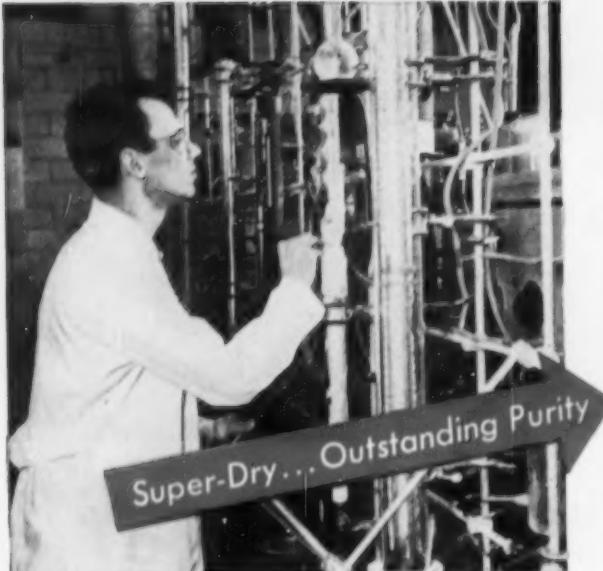
*Progress Is Our Most Important Product*

**GENERAL**  **ELECTRIC**

# APPRI

## Leading Refrigeration and Air

# genetron®



Look at the stringent manufacturing specifications listed here for the principal "Genetrons." Note their exceptionally low moisture content. For example, "Genetron" 12 and "Genetron" 141 are so dry they contain less than ten parts of water per million parts of refrigerant. That's moisture equal to only one thousandth of one percent (0.001%).

The overall purity of "Genetrons" is equally good. See how low they are in non-condensable gases and low boiling impurities. And, remember the quality of current production consistently surpasses even these specifications. No wonder so many leading manufacturers now prefer "Genetrons" as original charge for their equipment!

### genetron 12—WHITE LABEL

DICHLORODIFLUOROMETHANE

#### Quality Specifications

Moisture wt. %, max.	0.0010
Chlorides	none
High boiling impurities—vol. %, max.	0.05
Non-condensable gases (gases insoluble in perchloroethylene)—vol. % in vapor phase, max.	1.5
Boiling pt. at 760 mm. Hg. °F.	-21.6
Boiling range °F (to 85% pt.), max.	0.9

### genetron 141—GREEN LABEL

MONOCHLORODIFLUOROMETHANE

#### Quality Specifications

Moisture wt. %, max.	0.0010
Chlorides	none
High boiling impurities—vol. %, max.	0.05
Non-condensable gases (gases insoluble in perchloroethylene)—vol. % in vapor phase, max.	1.5
Boiling pt. at 760 mm. Hg. °F.	-41.4
Boiling range °F (to 85% pt.), max.	0.9

### genetron 11—ORANGE LABEL

TRICHLOROMONOFLUOROMETHANE

#### Quality Specifications

Moisture wt. %, max.	0.0015
Chlorides	none
High boiling impurities—vol. %, max.	0.05
Boiling pt. at 760 mm. Hg. °F	74.7
Boiling range °F (to 85% pt.), max.	0.5

# COVIED!

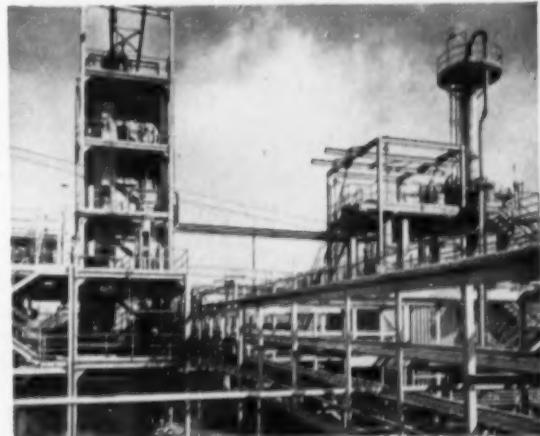
Conditioning Manufacturers All Approve...

## Super-Dry Refrigerants

Few products have ever undergone such exhaustive examination as "Genetron" Refrigerants. Leading refrigeration and air conditioning manufacturers have checked and rechecked them intensively . . . proved for themselves that "Genetrons" meet or surpass their most exacting specifications for fluorinated hydrocarbon refrigerants.

Yes . . . in every case . . . "Genetrons" have been certified for the original or replacement charge in America's finest equipment. That's because they have been proved to be—

- ✓ Super-Dry—guaranteed exceptionally low moisture content.
- ✓ Non-toxic, non-flammable, stable, safe.
- ✓ Non-corrosive to standard equipment materials.
- ✓ Critical and freezing points well outside range of operating uses.
- ✓ Solvent action on oil helps prevent solidification or congealing of lubricant.
- ✓ Miscible with oil; aid in lubrication of equipment.
- ✓ Identical and interchangeable in all respects with comparable fluorinated hydrocarbon refrigerants produced by any other manufacturer meeting the same high standards.



### EXTENSIVE FACILITIES:

In addition to its expanded "Genetron" production center at Baton Rouge, La., General Chemical has large new "Genetron" facilities at Danville, Ill.

### AVAILABLE EVERYWHERE!

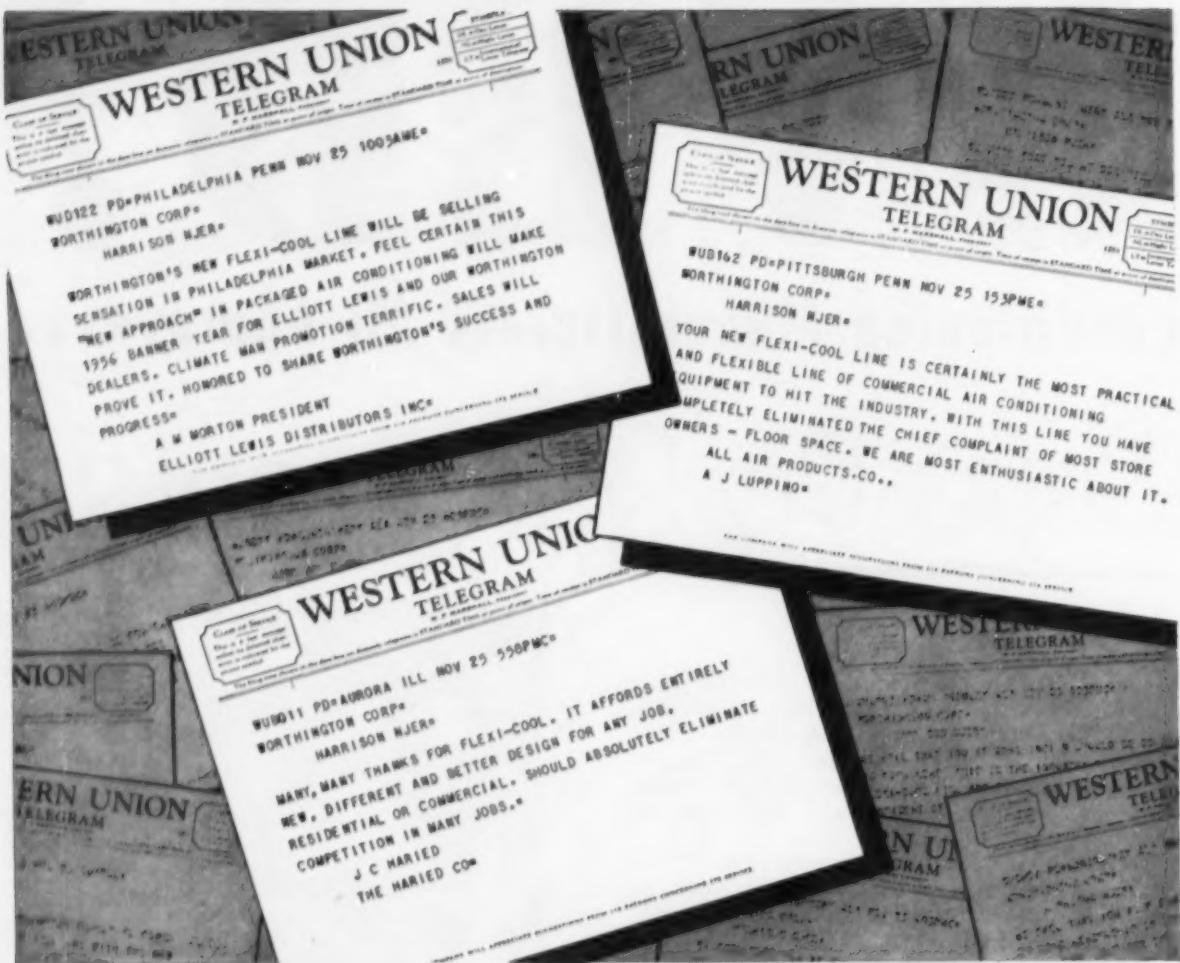
Coast-to-coast, America's leading Refrigeration and Air Conditioning Wholesalers feature "Genetron" Super-Dry Refrigerants. There's one as near to you as your telephone ready to supply you with complete stocks of "Genetrons" and with up-to-the-minute data on their uses.

Basic Chemicals  
for American Industry



**GENERAL CHEMICAL DIVISION**  
ALLIED CHEMICAL & DYE CORPORATION  
40 Rector Street, New York 6, N. Y.

See your refrigeration wholesaler



## Worthington dealers wire their thanks for 1956 air conditioning program

**Say exclusive FLEXI-COOL line and Climate Man Promotion promise record-breaking sales year**

No wonder Worthington dealers are enthusiastic about '56. Take E. W. Norwood of the Straus-Frank Co. in Houston, Texas. He wired: "The FLEXI-COOL line gives Worthington installers application latitude unmatched in the industry. With backing of Worthington's CLIMATE MAN promotion, we can't miss." Just as happy about the deal are men like H. G. Callow of Puget Sound Eng., Inc., Seattle, Wash., and George Bagwell of George E. Bagwell, Inc., Montgomery, Ala.

These men are talking about the way the new FLEXI-

COOL line (2, 3, 5, 7½ hp sizes) handles *any* residential or commercial job. With a minimum of basic sections and accessories that go together like building blocks, most any air conditioning job can be handled.

Add to this national and local back-up of the unique CLIMATE MAN promotion that's geared to bring in record sales inquiries, and you see why Worthington dealers look for a banner year in '56.

Find out more about Worthington's new FLEXI-COOL line and the CLIMATE MAN promotion today. Write for full details to Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.56-AC, Harrison, N.J.

A.5.56

# WORTHINGTON



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FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

If your prospect  
does this



suggest  
time payments



to close the  
sale



**T**ODAY the demand on working capital is heavy. Preferring to keep their cash and usual lines of credit intact for current operations, more and more of your prospects will want to finance their purchases of equipment. Be sure your proposals are complete by including information about buying on the nationally

popular COMMERCIAL CREDIT PLAN. To discover how COMMERCIAL CREDIT's tailor-made Refrigeration Financing Plan can help you build prestige and close sales, call our office in your city or write COMMERCIAL CREDIT CORPORATION, 14 Light Street, Baltimore 2, Maryland.

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**the only  
1/4-inch tape  
with 3 separate  
insulating barriers**



Only NoDrip Tape offers you *triple insulation*—stops condensation drip forever—makes waste space completely useable—gives you easiest, labor-saving installation.

NoDrip Tape is a pliable, cork-filled 8-strand covering...self-adhering, becomes a sealed pipe jacket the instant it's pressed in place. 100% vapor and moisture proof.

Requires no vapor-seal tapes or over-wraps. No fasteners, tools, brads or adhesives. Winds spirally around any tubing or pipe—around joints, tees, valves or angles. No experience needed...anyone can apply NoDrip Tape.

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LEADING WHOLESALERS**

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Bulletin D-40

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City \_\_\_\_\_ State \_\_\_\_\_

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## LETTERS

### Auto Air Conditioning Story Arouses Reader Interest

EDITOR:

We recently read an interesting article in the October 1955 issue of COMMERCIAL REFRIGERATION & AIR CONDITIONING magazine regarding automobile air conditioning. We would appreciate it very much if you could furnish us the complete address of the Fort Worth, Tex., dealer whose successful operations were described in this article.

A. S. LINDBERGH  
Rogers Heating & Engineering Co.  
West Springfield, Mass.

The full address of the dealer mentioned in this article is Texas Automobile Air Conditioning Co., 3436 Camp Bowie Ave., Fort Worth, Tex. Mr. George C. Huff heads this organization.

### Contractor Seeks Help on Printed Record Forms

EDITOR:

We have noted with special interest the article in the October issue of COMMERCIAL REFRIGERATION & AIR CONDITIONING regarding the printed bookkeeping forms used by Refrigeration Equipment Co. of Pittsburgh, Pa.

We wish to obtain sample copies of these forms, and are wondering if you might be able to furnish us with the correct address.

ROBERT L. GUEST  
Tolin Refrigeration Co.  
Denver, Colo.

The address of Refrigeration Equipment Co. is 1627 Penn Ave., Pittsburgh, Pa. The proprietor's name is Jack Ruthrauff.

### Frozen Food Firm Seeks Data On Aluminum Vapor Barrier

EDITOR:

Please send us the full address of the Alumiseal Corp., New York, N.Y. We are interested in contacting this firm to obtain further information on the aluminum vapor barrier which it produces and which was described on page 61 of the New Product Review section of your November issue.

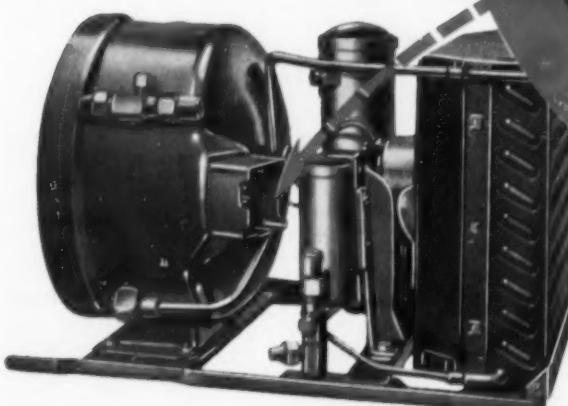
R. B. SKIFF  
Berkshire Frosted Food, Inc.  
Pittsfield, Mass.

Address of Alumiseal Corp. is  
429 East 53rd St., New York 22.

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## KELVINATOR EXCLUSIVE!

*New Plug-In Relay  
is both a starting  
relay and thermal  
overload protector*



JUST PLUG IN  
OR PULL OUT!

No Wires to  
Motor Terminals

- ★ Lighter weight; more compact, simplest mounting.
- ★ All parts for servicing located at one point, on one side of unit.

- ★ Nested-Fin Condenser for best heat dissipation—highest efficiency.

- ★  $\frac{1}{8}$  H.P. to  $\frac{1}{2}$  H.P. Hermetic Units.

*For additional information write Commercial Advertising Dept., Kelvinator Division, American Motors Corp., Detroit 32, Mich.*

*Division of American Motors*



*Means More for Americans*

# *Kelvinator*

SPECIALISTS IN REFRIGERATION SINCE 1914!

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& AIR CONDITIONING • FEBRUARY, 1956



## Now, you can handle any drying job if you stock just 4 Ansul Dryers and 8 Fittings

There isn't a drying job going that you can't handle with the Ansul line. What's more, you automatically *cut your dollar investment in truck stock* when you standardize on this advanced line. Equally important, you save valuable time by eliminating trips to pick up parts.

Once one of the 8 Ansul T-Connectors is permanently placed in the liquid line, you can install *any one* of the 4 Ansul T-Flo Dryer Cartridges (see above). These twelve parts give you *32 possible installation combinations*. The T-Connectors are available in  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ " and  $\frac{5}{8}$ " sizes for both flare and soldered installations. Here is flexibility that no other dryer line can match. For the largest installations Ansul dryers can be easily manifolded to provide unlimited drying capacity, eliminating the need for stocking outsize, infrequently used dryers.

Changing a T-Flo Dryer is the easiest thing in the

world. Remember, line breaking is not necessary. Just unscrew the old dryer and replace it with the new. Hand tightening will give you a leakproof seal. And you can install the T-Flo Dryer in any position, up, down or sideways.

Ask your Ansul Wholesaler about the new DRY-EYE fitting. The window changes color to let you see if the system is wet or dry. This is the most important servicing aid ever developed by Ansul—there's nothing else like it on the market. **THE ANSUL CHEMICAL COMPANY, Marinette, Wis.**



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FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

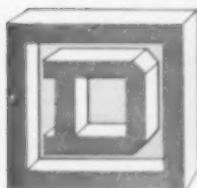
**SQUARE D GIVES YOU ALL 3!**

**MOTOR STARTERS**   **SAFETY SWITCHES**   **PANELBOARDS**   **LAY-IN DUCT**   **PLUG-IN DUCT**   **PUSH BUTTONS**   **TIMERS**

In the 60 Square D branch offices throughout the country there are Field Engineers ready to work with you on any electrical distribution or control problem. A substantial amount of their time is spent with original equipment manufacturers,

air-conditioning contractors, architects and mechanical engineers—finding the one best way to handle any given job.

It costs you nothing to have your nearby Square D Field Engineer work with you. Why not get acquainted with him?



ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

**SQUARE D COMPANY**

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& AIR CONDITIONING • FEBRUARY, 1956

# these 7 Keys open every door to



Water cooling has no "closed doors" this year. No matter what the problem, one of these 7 Marley cooling towers is the key. Special problems, such as tower location, fire codes, unusual corrosive conditions — all can easily be met and mastered with one of these '56 Marley cooling towers.

Marley towers cover the water cooling front — meet every service condition and capacity requirement. They're available when and where you need them, for stocks are maintained in all sizable cities. Call your reliable Marley distributor for information on the world's most complete line of water cooling towers for air conditioning and refrigeration.

\***Marclad Finish** is standard on all '56 steel Aquatowers. This high-temperature, thermo-setting plastic defies the corrosive effects of acids, alkalis, water — insures a longer and happier service life than any other packaged cooling tower!

## AQUATOWERS<sup>®</sup> (large capacity)

Models 4220 through 4250 provide the full performance water cooling ability and long service life essential to commercial refrigeration and air conditioning application. Fabricated of heavy gauge steel, ruggedness and durability are apparent in the construction of these towers. Their design incorporates a new ease of assembly and disassembly whenever required. These features plus operating and maintenance simplicity make them the first choice of discriminating buyers.



## AQUATOWERS<sup>®</sup> (medium capacity)

Models 4105 through 4115 run the gamut of intermediate capacity applications. These completely welded, heavy gauge steel units come fully assembled for easy field application. Highlight features include MarClad<sup>®</sup> finish . . . readily removable open distribution basin . . . quiet, deep pitched fan . . . Marley lifetime nailless fluting. Like other Aquatowers, they can be located indoors or out.

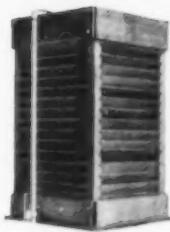


## AQUATOWERS<sup>®</sup> (small capacity)

Models 4102 and 4103 are designed for 2 to 4 tons of refrigeration or air conditioning. Installation, operation and maintenance are extremely simple, yet these small models incorporate the high performance design features of larger Aquatowers. MarClad<sup>®</sup> finish lends that adaptability and compatibility that is so appealing to owners.



# Successful Water Cooling



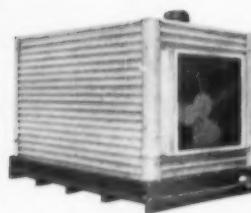
## SPRATOWERS® (Natural Draft)

There is nothing like a Marley Spratower for water cooling installations where minimum initial investment and lowest operating costs are essential. '56 Marley Spratowers incorporate a new super-spray system that achieves maximum water break-up and air-water contact. They are fabricated of select heart quality California redwood and shipped disassembled. Available in 11 air conditioning and refrigeration sizes.



## WOOD AQUATOWERS® (small)

Structural durability is outstanding in these all-wood towers produced in 5 models for service requirements of 3 through 15 tons. Ships factory-assembled for easy installation. Designed specifically for localities with high corrosion incidence, the forced draft design permits location of mechanical equipment out of the hot, humid air stream.



## WOOD AQUATOWERS® (large)

These all-redwood towers with heavy asbestos cement board casing are designed for longest service life under most corrosive operating conditions. Applicable to all services from 20 to 50 tons, they make use of forced draft and cross flow principles. Air discharge is vertical, making this tower applicable to many restricted locations. Ships disassembled, easily hoisted and erected.



## AQUACOOLERS®

This induced draft counterflow tower was designed primarily for indoor installation, but is equally adaptable to outdoor service. Available in 5 sizes with capacities from 3 to 15 tons, the Aquacooler uses both pressure spray and MarPak® nailless filling to achieve maximum water break-up, longer air-water contact, higher performance.

*"Nothing cools as well as water... nothing cools water as well as a Marley cooling tower"*

**The Marley Company**

Kansas City, Missouri



# NOW Make sure you get TRIPLE-SEAL Tightness in every joint



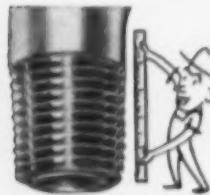
"It's All in  
the Groove"



## IMPERIAL Triple-Seal HEAVY DUTY FLARE FITTINGS



Imperial Heavy-Duty Triple-Seal Flare Fittings have 3 seals to give you new extra protection against leakage.



LONG LENGTH  
DRYSEAL PIPE  
THREADS  
ensure tighter joints  
—are especially valuable in providing additional takeup in reconnection.



PLASTIC CAPS  
on flared ends protect fittings during shipping and handling.

Ask for Catalog No. 81



### Assure extra protection against leakage

Here is how it works: When the flare nut is drawn up, the copper tubing is forced into the groove as well as against the two faces of the seat making a tight, *triple-seal* joint. This feature provides extra protection against leakage; enables these fittings to hold higher pressures. Groove is included on all sizes  $\frac{3}{8}$ " and larger.

In addition, Imperial Triple-Seal Heavy-Duty Flared Tube Fittings are heavier than ordinary flared fittings, have greater wall thicknesses and larger wrench flats. Elbows, tees and nuts are forged for greater strength. Designed for refrigeration applications.

Long Dryseal pipe threads on pipe thread ends assure tight joints—are especially valuable in reconnecting.

Now, use Imperial Triple-Seal Flare Fittings . . . make sure you get this extra protection against leakage.

### See Your Jobber

THE IMPERIAL BRASS MFG. CO. • 536 S. Rosine Ave. • Chicago 7, Ill.

In Canada: 234 Lauder Ave., Toronto, Ontario

# IMPERIAL

FITTINGS • VALVES • DRIERS • CHARGING LINES  
TOOLS for Cutting, Flaring, Beading, Pinch-Off, Swaging



Circle No. 15 on Reader Service Card



1906-1956

50 years  
of growth  
and  
progress

THE MOST COMPLETE  
LINE OF CONDENSING  
UNITS FOR THE AIR  
CONDITIONING AND  
REFRIGERATION TRADE





1956 marks the end of Brunner's first fifty years... and the beginning of new sales opportunities for you!

With the addition of new and redesigned models, Brunner now offers the most complete line of open-type refrigeration and air conditioning condensing units... from  $\frac{1}{4}$  through 100 H.P. ...available from a single manufacturing source.

Outstanding is the full line of new, moderate speed compressors in the over-10 H.P. class featuring pressure lubrication, new lightweight running gear, standardized valve plate assemblies, and a new Brunner exclusive... an automatic switch-over system that cuts in to protect

**BRUNNER**  
SINCE 1906

ENGINEERING FOR THE FUTURE

the compressor in case of pressure lubrication failure.

Brunner-Metic semi-hermetic condensing units are available from  $\frac{1}{4}$  through 3 H.P.

Redesigned BAC packaged air conditioners will include 3, 5,  $7\frac{1}{2}$  and 10 H.P. models, featuring separate discharge plenum.

Brunner dependability has long been a "buy-word" in the refrigeration and air conditioning industry. And today it's better than ever!

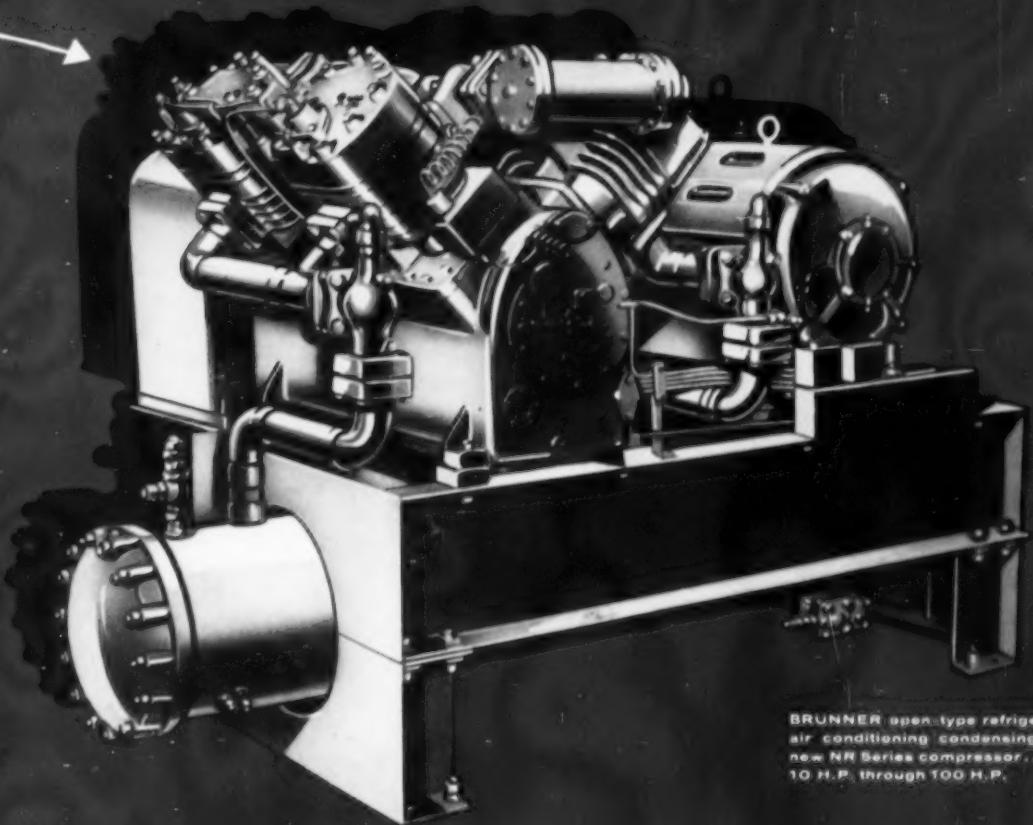
See your Brunner representative, or write for all the facts about the complete Brunner line.

BRUNNER MANUFACTURING CO., UTICA, N.Y.

The Brunner Company, Gainesville, Ga.

In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ont.

AND IF YOU NEED AIR COMPRESSORS—Brunner has a complete line, for every requirement, ranging from  $\frac{1}{4}$  H.P. through 50 H.P.

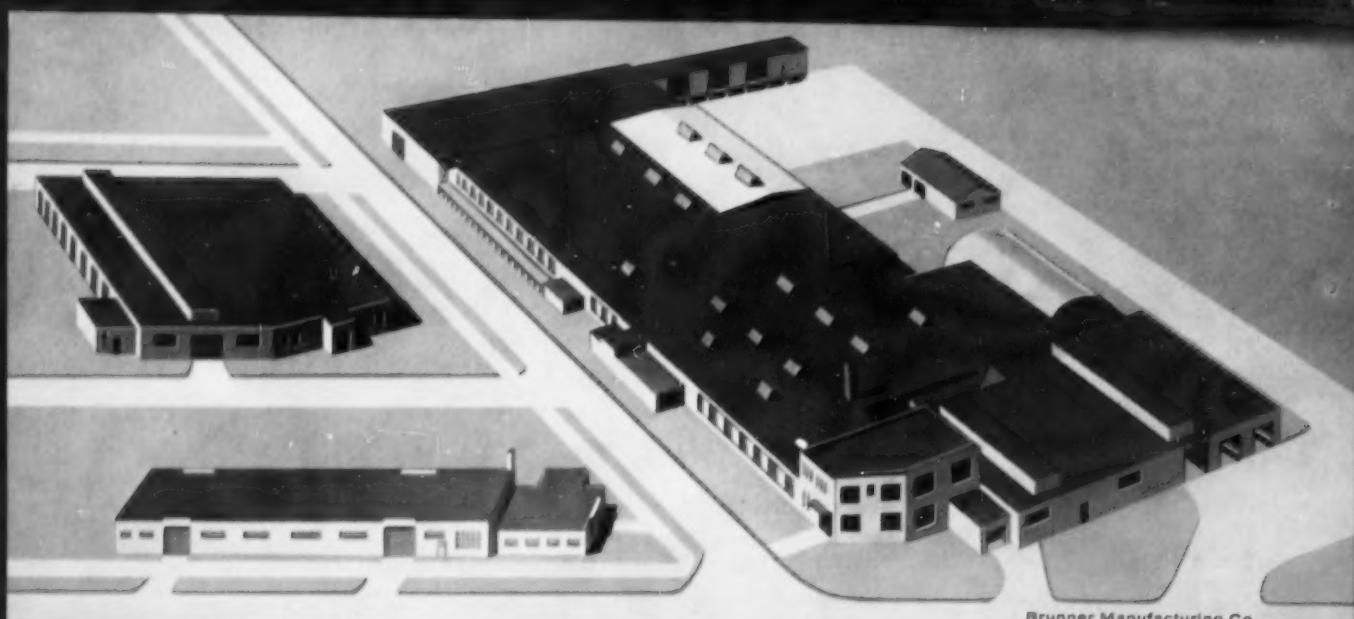


BRUNNER open-type refrigeration and air conditioning condensing unit with new NR Series compressor... available 10 H.P. through 100 H.P.

MEANS MORE SALES DOLLARS FOR YOU!



BRUNNER-METIC semi-hermetic refrigeration condensing unit... air-cooled or water-cooled... from  $\frac{1}{4}$  H.P. through 3 H.P.



Brunner Manufacturing Co.  
Utica, N.Y.

**NEW PLANT FACILITIES**

**PLANNED RESEARCH**

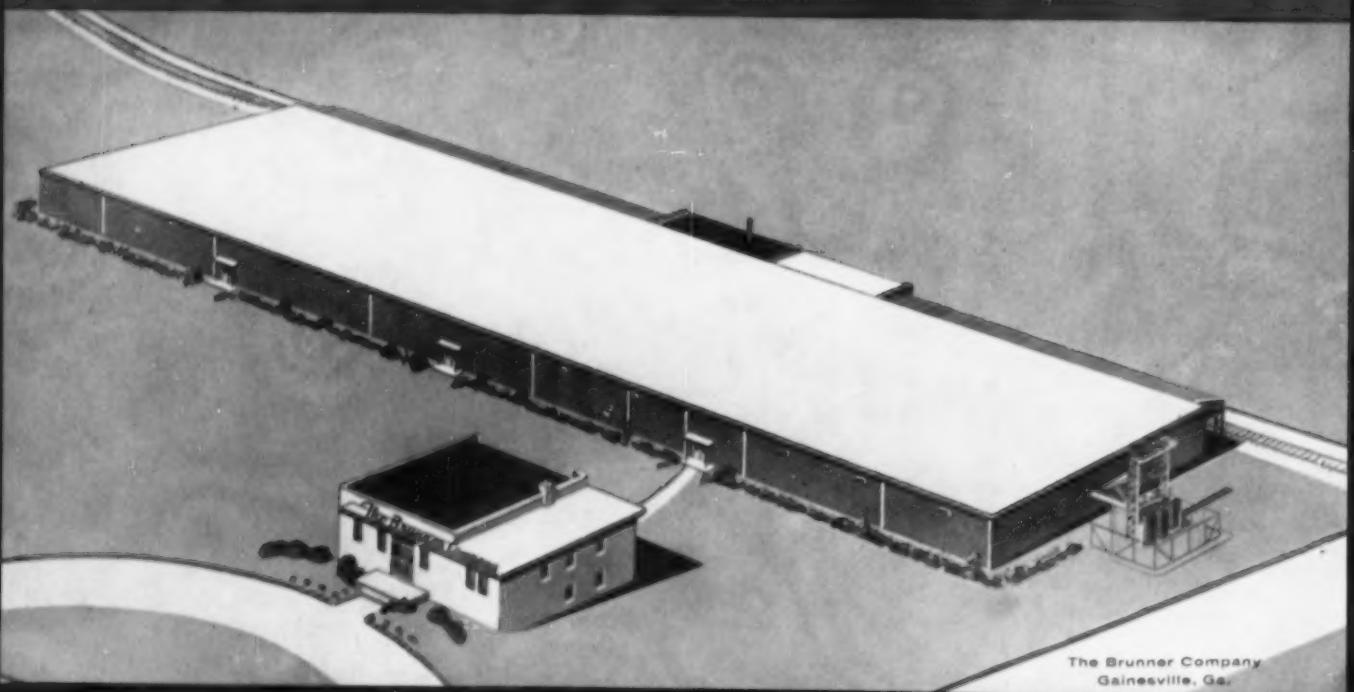
**ADVANCED ENGINEERING**

Increased demand for Brunner Metrics is now being met by The Brunner Company's new plant at Gainesville, Ga.

A progressive program of research and development assures continued Brunner leadership in quality and performance.

Brunner engineering brings you more sales opportunities through new applications for Brunner condensing units... plus a long list of improvements in the standard Brunner line.

**BRUNNER**  
SINCE 1860



The Brunner Company  
Gainesville, Ga.



## Mr. Serviceman: DOES YOUR PRESENT CAULKING COMPOUND GIVE YOU ALL THREE?

1. LOWER PRICE

2. EASIER APPLICATION

3. TOP PRODUCT QUALITY

If Not . . . You Owe It To  
Yourself To Start Using

**Mortite**

**CAULKING CORD or  
CAULKING GUM NOW!**

### Here's Why...

*Mortite Caulking Cord or Mortite Caulking Gum* will perform your many caulking and sealing jobs faster, better than any other compound—and at much lower cost! Made specifically for and designed by refrigeration servicemen, these two MORTELL products come packaged in handy cylindrical containers to fit any tool box. Compact size eliminates waste.

### These Facts Tell the Difference!

**MORTITE CAULKING CORD**— $\frac{3}{16}$ " rope-like strands stay permanently soft. Non-staining, Mortite White in color, ready for immediate painting. Three compact, 8-strand 16-ft. rolls unwind one or more strands at a time without unwinding entire roll.

**MORTITE CAULKING GUM**—Easily hand-moulded into beads, wads, gaskets or any desired shape. One pound slug (2 $\frac{1}{2}$ " x 6") never hardens or cracks—adheres to any clean, dry surface through normal temperature ranges.

Mortite Caulking Cord or Mortite Caulking Gum will do the job better than your present caulking compound at a fraction of your present cost. Write today for complete information about these two products and the complete line of Mortell refrigeration products.

MAIL COUPON FOR FULL INFORMATION 

**J.W. Mortell  
COMPANY**

Makers of Famous NoDrip Tape and Mortite



J. W. MORTELL CO.  
553 Burch St., Kokomo, Ind. 46901  
O.K! Send me full information about the complete  
line of Mortell refrigeration products.

I'm a  Jobber  Serviceman

Name

Address

City  State

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← Circle No. 16 on Reader Service Card

# ABOUT PEOPLE

**Alexander Martin** has been appointed field sales manager, and **Philip Cohen** has been named marketing services manager of the Sturtevant Div., Westinghouse Electric Corp. Martin will be responsible for all regional sales activities of the division, and Cohen will be responsible for all supporting services of sales including advertising and market analysis. In new regional posts are **Robert Mercer**, northeastern regional manager, with headquarters in New York City, and **Hiram W. Rainey, Jr.**, central regional manager, with headquarters in Pittsburgh, Pa.

**Joseph J. Sullivan** has been appointed sales manager, room air conditioning, for York Corp. Sullivan formerly was manager of sales management development of the Radio and Television Div. of Sylvania Electric Products, Inc., Buffalo. Earlier he was with Emerson Radio & TV, Gross Distributors, Inc., New York City, and Domestic Sewing Machine Co., Cleveland.

**George K. Marshall** has been appointed manager-product planning of the General Electric Co.'s Weathertron Dept. Marshall joined the G-E Weathertron Dept. when it was organized in January, 1952, as manager-commercial engineering. Before the Department was formed he was engaged in preliminary planning for the new heat pump. As manager-product planning, he

will be responsible for formulating price levels and future price trends; marketing supervision of product design; and marketing forecasts.

for the promotion of Carrier residential equipment in the field.

•

**Graham B. Neidhardt** has joined Sherer-Gillett Co. as a refrigeration engineer. Formerly he was associated with Bally Case & Cooler Co. in a similar capacity. Previous experience includes posi-



tions as chief engineer for Sunroc Refrigeration Co., Glen Riddle, Pa., and C. Nelson Mfg. Co., St. Louis.

•

**W. J. Francis** has been appointed vice president in charge of sales for American Potash & Chemical Corp. Francis has been general sales manager, western, of the company since December, 1952, after coming to the organization from Pennsylvania Salt Mfg. Co., Tacoma, and previous experience with California Spray-Chemical Corporation, Richmond, Calif. **Ed M. Kolb** will continue in charge of eastern activities as general sales manager, eastern, and **William Clines** has been promoted to western sales manager from his previous position of sales manager, western, heavy chemicals.



R. G. Mozley C. A. Lessing

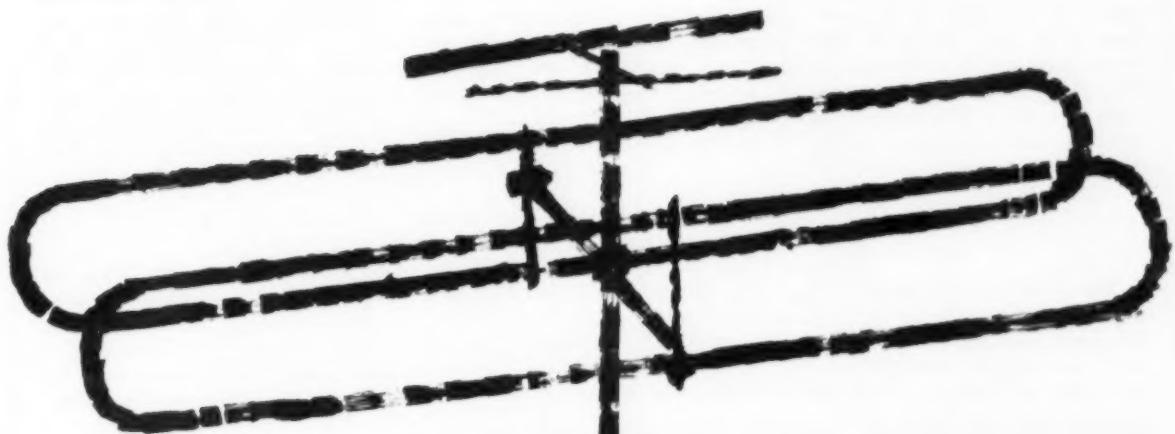
Company, has been appointed chief laboratory engineer of Copeland Refrigeration Corp. Mozley has been in charge of laboratory and applications development activities since joining Copeland in January, 1952. Prior to that he was refrigeration applications specialist for Hussmann Refrigeration for 10 years. Lessing most recently was associated with International Harvester in charge of a section of that company's refrigeration product development and engineering laboratory. He joined Copeland when International Harvester departed from the refrigeration products field.

•

The Kinetic Chemicals Div. of Du Pont has reassigned a number of its technical salesmen and designated its New York and Chicago sales districts as the "eastern" and "central" districts respectively.

**Robert E. Sangston**, Wilmington area sales representative, replaces Warren L. Hotmer as sales supervisor for the eastern district. **James B. Gray** has been transferred to Atlanta in the eastern area replacing Walter H. Zillessen Jr. **John H. Dowling** will assist A. H. Lawrence, manager of specialty sales, in Wilmington. **Earle N. Stouffer** has been named propellant sales correspondent in the Wilmington

**Harold J. Barnes** has joined the residential sales department for the Unitary Equipment Div. of Carrier Corp. Barnes reports to William A. Lake, residential sales manager, and will be responsible



**You're on 2 top  
when you're a**

**TV shows  
Carrier dealer!**



Dave Garroway, host on NBC-TV's "Today," will talk up Carrier's complete line. Garroway's quiet manner packs a powerful sales wallop.



Arlene Francis' "Home" show is viewed by millions of homemakers. She, too, will sell the complete Carrier line and send prospects to you.

When TV personalities Dave Garroway and Arlene Francis tell their listeners, "It's time to call Carrier"—it's *you* they'll call.

And these two star TV salesmen will give thousands of your prospects some mighty convincing reasons *why* to call you.

For example, as a Carrier dealer you'll have a product for every one of these prospects. You can talk year-round air conditioning *before* a house is built, add air conditioning to a present furnace or install the new Carrier furnace and fit on a cooling unit in the future.

Like to have Dave and Arlene work for you? It's time to call your Carrier distributor, Carrier Corporation, Syracuse, New York.

**Carrier**

**first name  
in air conditioning**

office. **J. A. Landt, M. B. Jackson, J. B. Gray and A. E. Fullford**, who had been reporting to **J. C. Hoopes**, wholesale refrigerant sales manager in Wilmington, now are reporting to **Charles Wirth III**, manager of the eastern district.

•

**Theodore F. Preston** has been appointed residential air conditioning specialist in the Cleveland office for the Unitary Equipment Div. of Carrier Corp. With

Carrier since 1946, Preston most recently was responsible for national promotion on Weather-maker air conditioned home openings.

•

Mountain region with headquarters in Cedar Rapids, Iowa; **Pete Obee**, managing the Western region from Portland, Ore., headquarters; and **C. G. Branch**, Midwest regional head with headquarters in Bloomington, Ill.

•

**J. M. Gleason** has been named sales manager for the Williams Div. of Eureka Williams Co. He has been with the company since 1950, and most recently was assistant sales manager. New regional sales managers are **Frank Mills**, who will cover the Rocky

•

**Herbert E. Soderberg** has joined the United States Air Conditioning Corp. as manager of its order service department. Soderberg was formerly assistant to the president of Thermal Co., refrigeration equipment wholesaler of St. Paul, Minn.

## "I HAVE ELIMINATED THE PROBLEM OF MOISTURE"

Here is another serviceman who has found that Thawzone provides a more efficient method of handling moisture problems.

Thawzone can be used to prevent trouble and to clear up an existing moisture condition.

122 N. Yale,  
Fullerton, Calif.  
Highside Chemicals Co.,  
10 Colfax Avenue,  
Clifton, N. J.

Gentlemen:

Since I began using Thawzone I have eliminated the problem of moisture when repairing refrigeration equipment.

Being in business alone, Thawzone's quick elimination of moisture problems has given me more time to devote to other repairs that merit my attention.

This alone, as one can clearly see, saves valuable time and money, so I wish to say, and I'm sure I speak for the other gentlemen in my profession, "Thanks to Thawzone". I remain,

Very truly yours,

J. B. Clark

J. B. Clark  
Clark's Refrigeration Co.

### CHECK THESE THAWZONE ADVANTAGES AGAINST ANY OTHER MOISTURE REMOVING METHOD:

- 1. Actually destroys moisture... not a mere anti-freeze.
- 2. Scavenges oxygen... the only product that eliminates this corrosion-causing chemical.
- 3. Cannot cause pressure drop.
- 4. Cannot clog with oil.
- 5. Does not release moisture when temperature changes.
- 6. May be used in open or hermetic units containing "Freon", methyl chloride, methylene chloride, or isobutane.
- 7. Costs only about 8 cents per lb. of refrigerant treated. Used in minute amounts.

Why don't you try a 1 oz bottle of Thawzone? Also available in 4 oz. and pint bottles. Call your wholesaler. Stewart Industries, Inc. (formerly Highside Chemicals Co.), 4 Colfax Avenue, Clifton, N. J.



Circle No. 19 on Reader Service Card



2 YEARS OF  
CLEAN SERVICE  
This needle valve remained clean and corrosion-free during its two years of service in a Thawzone-treated system.

•

Several new appointments in the field engineering and sales staffs of Airtemp Div. of Chrysler Corp. have been announced by **J. F. Knoff**, vice president in charge of sales. **Charles A. McGinnis** has been named district manager in the Dayton region, with headquarters in Cleveland. **Robert T. Welch, Jr.**, is another new district manager in the Dayton region. He will headquartered in Louisville, Ky. **Garnet W. Lunsford** is a new district manager in the Atlanta region, and **Elmer F. Voss** has been named field engineer in the same regional area. **Robert W. Lamb** has been appointed district manager in the New York region, covering northern New Jersey. **Thomas B. Sex-**



"Doesn't he know that by specifying  
White-Rodgers Controls he can  
cut out all those complaints?"

Complaints or congratulations . . . which will you get from your customers? Controls can often make the difference, you know.

You can bring out the best in any refrigeration or air conditioning equipment with dependable, accurate White-Rodgers controls. They're engineered by experts who know your customer's needs.



**WHITE-RODGERS** *Controls*

FOR HEATING • REFRIGERATION • AIR CONDITIONING

ST. LOUIS 6, MO.  
TORONTO 8, ONTARIO

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& AIR CONDITIONING • FEBRUARY, 1956

ton, a new district manager (room air conditioners) in the West Coast region, will headquartered in Los Angeles. **R. B. Hamilton**, named district manager in the Dallas region, will cover south and west Texas, and **John F. Ballew** as district manager in the same region will cover north Texas.

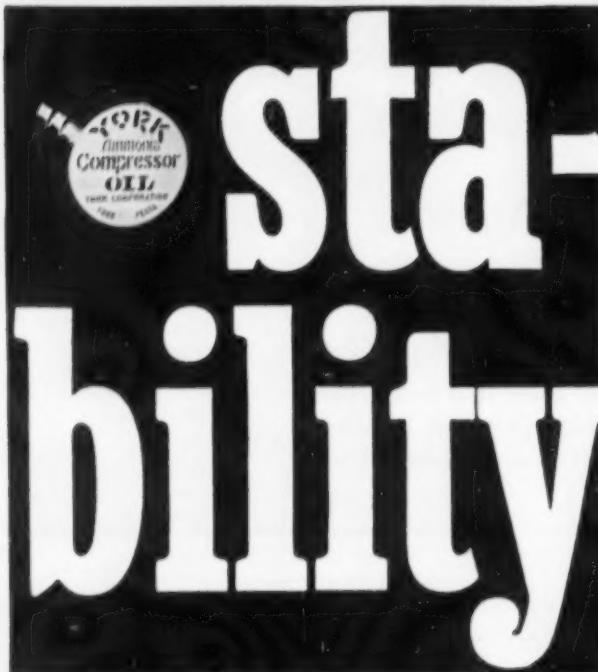
John D. Kendrick and Robert R. Clarke have been appointed regional sales managers for the central heating and air

conditioning division of Gibson Refrigerator Co. Kendrick will make his headquarters at New Orleans and will cover the Gulf area including Louisiana, Mississippi, Alabama, Georgia and Florida. Clarke will service dealers in Texas, Oklahoma and New Mexico. His headquarters will be in Dallas.

**Chester A. Brunner** has been appointed district sales representative for the Buffalo area by the American-Standard Air Condition-

ing Div. In his new capacity, Brunner will work with air conditioning distributors in that area in developing merchandising programs with air conditioning dealers.

## YORK REFRIGERATION OILS:



Compressors are running hotter and faster than ever before, and heat is the big enemy of unstable oils. A trend to higher operating speeds and temperatures started years ago, and engineers say it will continue.

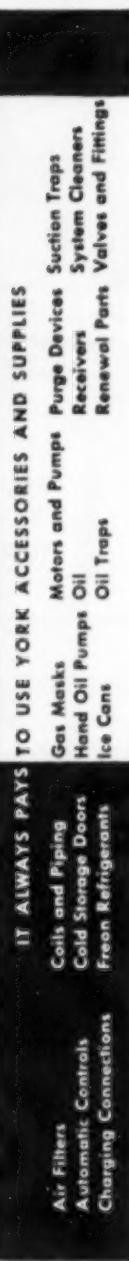
Your customer's equipment needs the protection of oil you know is *stable*—and York Oils definitely are!

YORK OIL IS AVAILABLE THROUGH YOUR YORK WHOLESALER OF ACCESSORIES & SUPPLIES



**YORK CORPORATION**  
the quality name in refrigeration oils

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885  
Circle No. 21 on Reader Service Card



Appointment of **James D. MacFarland** as sales representative



has been announced by A. C. Dappert, vice president in charge of sales of the Mueller Brass Co. MacFarland has been assigned to the Washington, D. C. office, where he will assist E. E. Sutter, district sales manager. Prior to his appointment, MacFarland was associated with the Davison Chemical Div. of W. R. Grace & Co. for five years.

**Frank L. Ziccarelli**, 65, died Jan. 1 in Chicago. Ziccarelli was associated for 35 years with Marsh Instrument Co., manufacturers of refrigeration instruments and valves. He retired in June 1955.

Alvin R. Close has been appointed heating and air conditioning representative for McQuay, Inc., in the Toledo, Ohio territory.



Close has been a manufacturer's representative for allied lines since 1952, and prior to that was a research engineer with Battelle Memorial Institute and Owens-Illinois Glass Co.

**William A. Finn** has been appointed general manager of Worthington Corp.'s Holyoke, Mass., Div., into which have been combined the company's works and sales operations there. Finn has been with Worthington since 1926,

# IN 1956...

get better performance...faster service with

## B&G Cooling Equipment



### NEW PACKAGE LIQUID COOLER

A complete cooling unit for homes, apartments, commercial and industrial buildings, process work. Design highlights include low pressure drop through evaporator—non-recycling pump-down—integrated electrical control system—low center of gravity for easy installation. Completely wired, including chiller and tower pump. Send for Bulletin HB-755.

Specifying "B&G" throughout for your air conditioning and refrigeration installations assures you of equipment known for quality—with a single manufacturer's responsibility for satisfactory operation.

B&G 1522 and 1531 Pumps, for example, have a long record for dependable economical and *quiet* performance. Among their many features is the "Remite" leakproof mechanical Seal—harder than glass—wear-proof!

B&G Evaporators, Condensers and other heat exchange equipment offer time-tested design—rugged construction—precision workmanship—all combined to provide top performance and long life. These units are built to ASME Code requirements.

Write today for a complete file of B&G air conditioning and refrigeration equipment literature.



**BELL & GOSSETT**  
COMPANY

Dept. REF-45, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1490 O'Connor Drive, West Toronto

& AIR CONDITIONING • FEBRUARY, 1956

Circle No. 22 on Reader Service Card

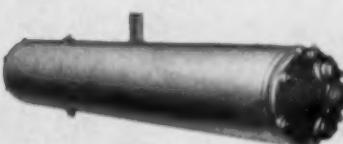
### ★ STOCK SERIES FOR IMMEDIATE SHIPMENT

To give you fast service, most frequently used sizes of the units starred below are kept in factory stock for immediate delivery. Write for descriptive literature.

★  
B&G  
Series 1522  
Pumps



★ B&G Series 1531 Pumps



★ B&G Model CRF  
Straight Tube Condensers



★ B&G Model CFG  
Shell and Coil Condensers



★ B&G Model LRS Liquid Receivers



★ B&G Series RG Heat Exchangers



B&G Evaporators

and for the past three years has been assistant general sales manager. The Holyoke plant produces air conditioning and refrigeration equipment, Freon and ammonia compressors and air compressors and equipment.

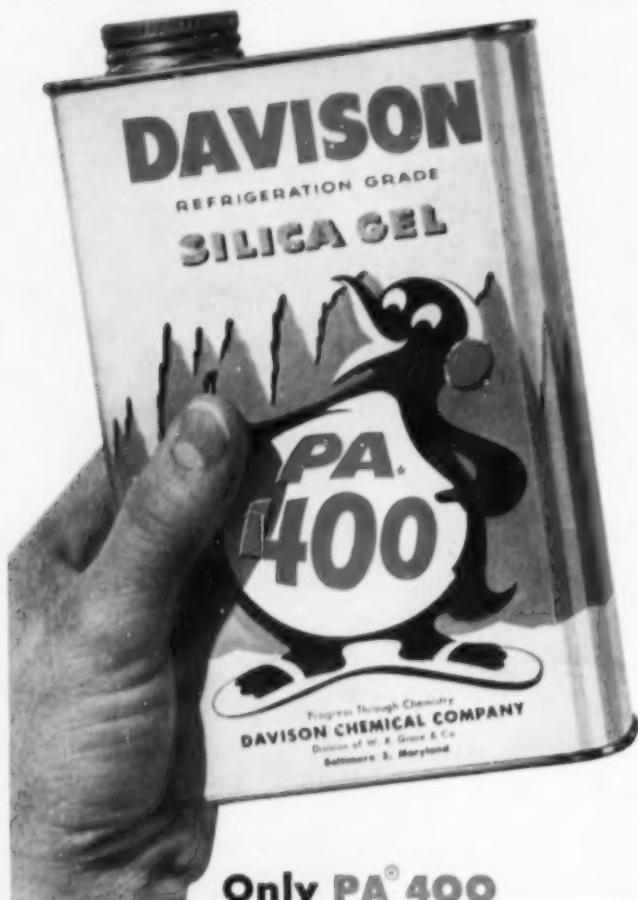
**Harry Clifton Fischer** has been appointed works manager by the Deering Air Conditioning Co. Before coming to Deering, Fischer had been associated with the Ebc

Mfg. Co. as chief engineer, and with Temprite Products as project engineer.

**W. G. Frank**, formerly executive vice president, has been named president of the American Air Filter Co., and **W. M. Reed** has been elevated from president to the newly created post of chairman of the board. Also elected at the meeting of directors were **Ben R. Shaver** from secretary-treas-

urer to vice president and treasurer, and **E. G. Mason** from assistant secretary-treasurer to secretary.

**Rowland B. Greenway** has been named product sales manager by Lonergan Mfg. Div., McGraw Electric Co. Greenway, former regional manager of RCA, will work directly with the company's national sales organization and will headquarter in Albion, Mich.



**Only PA® 400 gives you all the required qualities**

- HIGHEST CAPACITY ● PHYSICAL ADSORPTION NOT CHEMICAL ACTION
- DRIES REFRIGERANTS TO BELOW 2PPM AT 120°F. ● ADSORBS ACIDS ● NON-DUSTING
- MINIMUM PRESSURE DROP ● NON-DELiquescent ● NO CHANNELING

*Progress Through Chemistry*



**DAVISON CHEMICAL COMPANY**

DIVISION OF W. R. GRACE & CO.

Baltimore 3, Maryland

Producers of: Catalysts, Inorganic Acids, Superphosphates, Triple Superphosphates, Phosphate Rock, Silica Gels and Silicofluorides. Sole Producers of DAVCO® Granulated Fertilizers.

**W. E. Kahlert** has been appointed vice president in charge of sales for Baltimore Aircoil Co. Kahlert has been with BAC for about one year, and will direct the company's sales and advertising program. He formerly was with Trane and McQuay.

**R. R. Forseille**, as vice president in charge of production, will assume responsibility of the factory operation and will supervise purchasing.



W. E. Kahlert

**James D. Jolley** has been appointed southwest zone manager for Sherer-Gillett Co. with headquarters in Houston, Tex. His territory includes the states of Texas, Louisiana and New Mexico. Since

1946, Jolley has been engaged in selling, covering most of the products in the commercial refrigeration field and also acting as a manufacturer's representative for commercial refrigerators.



**Del Albright**, chief engineer of A-P Controls Corp.'s refrigeration controls laboratory, has been

appointed to the company's refrigeration sales division. Albright had formerly been with McCray Refrigeration Co.

•

William E. Judd has been appointed general manager of the

U. S. Machine Div. of Stewart-Warner Corp., Lebanon, Ind. He replaces Carl J. Winkler, Sr., who has retired. Judd, in his 13 years with Stewart-

Warner, has been general sales manager of the South Wind Div., and assistant to James S. Knowlson, former president and Bennett Archambault, present S-W president.



•

**Richard J. Bamberg** has been appointed sales manager of the freezer-air conditioner division of Admiral Corp. Since 1952 he has been a regional sales manager with headquarters in Memphis.

•

**John R. Shrewsbury** has been named field supervisor of air conditioning sales by Flexible Tubing Corp. Shrewsbury was formerly district manager for National Homes Corp. in the West North Central area,

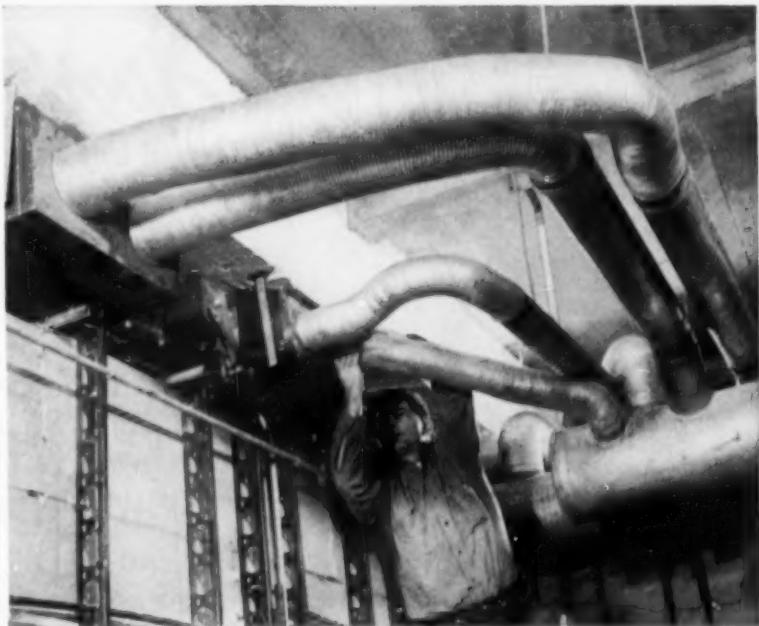
and for four years was district sales representative for Arvin Industries, covering New England and New York state. He will work with Flexible's sales representatives in the promotion and sale of Thermaflex flexible air conditioning ducting.

•

**Fred S. Gombert** has been named a vice president of the Ingersoll Conditioned Air Div. of Borg-Warner Corp. Gombert is manager of the division.

## *Thermaflex: flexible ducting*

**outperforms rigid ducting and installs faster at less cost**



Whether it's a hot or cold air system, or both, you will find that you will save time and money when you use Thermaflex® high or low pressure flexible ducting as a connector to snake around bends and obstructions. You can forget about special elbows or costly connectors, for when you use Thermaflex one man, without special tools, can make the necessary connections in a matter of seconds. You'll find, too, that Thermaflex is designed for the job. It is flame-proof and waterproof and will give years of trouble-free service. Its

use in a system reduces vibration and deadens air stream noises.

Thermaflex is engineered to provide excellent air flow characteristics and provides a minimum friction loss in bending around obstructions.

Write, today, for more information about this very useful product. Fill out the attached coupon and your information will be sent by return mail. Let us show you how you can save both time and money on your next air conditioning system.

## *Flexible Tubing*

CORPORATION

GUILFORD, CONNECTICUT • LOS ANGELES 64, CALIFORNIA

Flexible Tubing Corporation, Dept. 6, Guilford, Connecticut  
Please send me more information on Thermaflex.

Name \_\_\_\_\_

Title and Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

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GET PEAK PERFORMANCE

# THRU and THRU

*buy Sporlan Catch-Alls*

**The Perfect Filter-Drier**

**with the Famous Molded Porous Core**

Yes, it's easy to see why only Sporlan Catch-Alls can offer you Thru and Thru Peak Performance.

One look at these famous molded porous Catch-All cores, with their huge tri-dimensional filtering areas, and you know why Sporlan offers Thru and Thru Filtering... instead of just ordinary straining.

You can see, too, why they cannot powder... cannot pack, and why the refrigerant cannot by-pass or channel around them.

Being molded of minute particles of a highly efficient desiccant, double activated, then immediately sealed... they dry the refrigerant down to an extremely low end point, a point so low that any remaining moisture is absolutely harmless.

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So... if you want perfectly clean, perfectly dry refrigeration and air conditioning systems... Buy Sporlan Catch-Alls, the Perfect Filter-Drier, and Get Peak Performance Thru and Thru.

Ask your wholesaler for the Sporlan Bulletin 40-10 today!

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system  
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The industry's most complete line of  
"air-cooled" . . . in matched 2, 3, 5 & 7½ h.p. models!



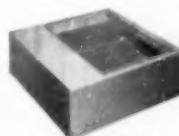
**CONDENSING UNIT**  
compressor,  
condenser coil,  
blower, receiver



**HORIZONTAL AIRFLOW  
COOLING COIL**  
coil,  
expansion valve,  
drain pan



**VERTICAL AIRFLOW  
HOUSED COIL**  
v-type coil,  
expansion valve,  
drain pan



**COUNTER FLOW  
HOUSED COIL**  
coil, expansion valve,  
drain pan



**COIL-BLOWER  
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filter, coil  
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Add-on



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Central Station  
Air Conditioner

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Please send me complete details on "air-cooled"

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POSITION

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the new FREEZ-KING—easiest to operate and most sanitary twin freezer in the world. Two complete freezers in one stand—each unit operates independently—every portion perfect—exclusive new FREEZ-KING automatic feed.



MODEL 900-B



MODEL 505-605



MODEL 225



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## A MODEL FOR EVERY PURPOSE



### MODEL 160 SHAKE DISPENSER

serves  
200 SHAKES  
AN HOUR

- Easy! As simple as serving a soft drink.
- Produces shakes and malts at low cost—high speed—big profits.
- Sanitary! Direct from dispenser to customer. No handling. No contamination.

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serves  
SOFT ICE CREAM  
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- Uses less power—costs less to operate.
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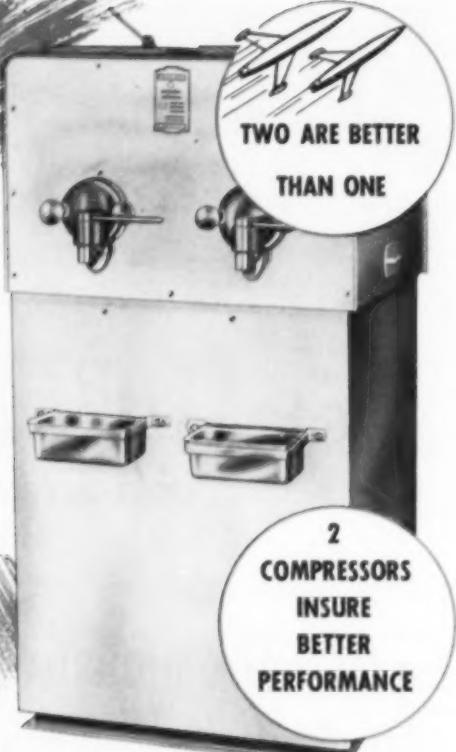
Burger Stands  
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Amusement Centers  
Military Canteens  
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... and many others



ORDER YOUR FLOOR  
SAMPLES TODAY!



### MODEL 975

#### SELF CONTAINED

Spigot type draw-off produces neat, uniform products. All stainless steel. Large output capacity.

EXCLUSIVE TERRITORIES AVAILABLE FOR MASTER DISTRIBUTORS & DEALERS

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*I switched to Typhoon*

**says S. G. Taylor, Taylor Refrigerator Co.  
Des Moines, Iowa**

"...because we found out that Typhoon gives full cooperation all along the line...from the president's office to the shipping dock. We particularly like the warm, friendly atmosphere that exists between the Typhoon organization and us. They go all out to serve us."



*I switched to Typhoon*

**says D. M. Cawthon, Dudley Cawthon, Inc.  
Miami, Florida**

"...because I was looking for a quality line that was both complete and flexible. After going through the Typhoon factory, I saw for myself that the quality of materials and workmanship put into Typhoon equipment could only result in a superior product...and make friends and satisfied customers for us."



*I switched to Typhoon*

**says E. W. Farr, Jr., Bell Refrigeration Corp.  
Cleveland, Ohio**

"...because we needed a reliable 'on time' delivery schedule and we found we could depend on Typhoon's shipping promises. Since we became members of the Typhoon family, our air conditioning business has been placed on a more personal and a more profitable basis."



Typhoon Air Conditioning Company  
505 Carroll St., Brooklyn 15, N. Y.

Tell me about a Typhoon franchise in my territory. Send  
me Information Bulletin C4

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Take a tip from these money-making distributors. Send in the coupon for information on a Typhoon direct factory franchise.

**TYPHOON**

**Typhoon Air Conditioning Company**

Division of Hupp Corporation

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Specialists in Air Conditioning Since 1909



No other low-temperature insulation can match this unique combination of properties

	LOW "K" FACTOR	SUPERIOR WATER RESISTANCE	EXCELLENT COMPRESSIVE STRENGTH	LIGHT WEIGHT	EASE OF HANDLING	SUPERIOR RESISTANCE TO VERMIN & DECAY	LOW INSTALLATION COST
<b>STYROFOAM</b>	✓ Permanently Low. Avg. 0.25	✓ Remains Dry and Assures Constant "K" Factor	✓ Highest Strength- Weight Ratio of Any Insulation	✓ Lightest of All Rigid Insulations. Avg. Den- sity, 1.8 lbs. per cu. ft.	✓ Pleasant—Fabricates Easily with Common Tools. Doesn't Crumble	✓ Has No Food Value	✓ Lowest Cost, Too, Per Year of Service
<b>INSULATION A</b>		✓	✓			✓	
<b>INSULATION B</b>	✓			✓			
<b>INSULATION C</b>	✓		✓				

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FEBRUARY, 1956 • COMMERCIAL REFRIGERATION



# Styrofoam offers you all the properties you require in a low-temperature insulation

**That's why so many leading companies depend on it**

**FAIRMONT  
CANNING  
COMPANY  
chooses  
Styrofoam**



for its superior resistance to rot, mold, moisture. This Fairmont, Minnesota, company used nearly 1,000,000 board feet of Styrofoam® (a Dow plastic foam) on the floors, ceilings and walls of their new -10° F. freezer. They know its resistance to rot, mold, and moisture will assure long, efficient service.

**MICKELBERRY  
SAUSAGE  
COMPANY  
chooses  
Styrofoam**



for its light weight, ease of installation. This Bushnell, Illinois, meat company found the light weight and ease of handling and bonding of Styrofoam made installation surprisingly economical in its new freezer installation. You can be sure future building plans will include Styrofoam again.

**LAWSON  
MILK  
COMPANY  
chooses  
Styrofoam**



for its high structural strength. This Cuyahoga Falls, Ohio, dairy used Styrofoam in its new freezer and quick-chill room. Owners report, "Its fast, low-cost installation proved it best for milk and candy coolers and freezers, and its recent use as floor insulation under a 20-ton sharp-freeze unit".

**GRAND  
UNION  
chooses  
Styrofoam**



for its low "K" factor, lasting efficiency. This large supermarket chain re-insulated a 100-foot-long meat cooler with Styrofoam. There's no doubt that the low "K" factor of Styrofoam will stay low. This Dow plastic won't absorb water. It has proved time and time again to be unmatched in permanent insulating efficiency.

**For further information** on Styrofoam for use in low-temperature work, as a perimeter insulation or pipe covering, please write Dow Plastics Sales Department PL 500C, THE DOW CHEMICAL COMPANY, Midland, Michigan, or contact your Styrofoam distributor: *The Putnam Organization, Inc., Chicago, Ill.* • *Seward Sales Corp., Elkhart, Ind.* • *Styro Products, Inc., Kansas City, Kansas* • *Atlantic Foam Products Co., Ipswich, Mass.* • *Par-Foam, Inc., Detroit, Mich.* • *Edwards Sales Corp., Minneapolis, Minn.* • *Floral Foam Products, Midland, Mich.* • *Styro Sales Co., New York City* • *William Sumnerhays Sons Corp., Rochester, N. Y.* • *G. & W. H. Corson, Inc., Plymouth Meeting, Penn.* • *The Emerson Co., Houston, Texas* • *Utah Lumber Co., Salt Lake City, Utah* • *S & S Sales Corp., Milwaukee, Wis.* • *Durofoam Insulation, Ltd., Kitchener, Ontario, Canada* • *Western Foam Products, Inc., Colma, Calif.* • *Wiley-Bayley & Company, Seattle, Wash.*

*you can depend on DOW PLASTICS*



Here it is...!  
**THE NEW "48-FRAME" MOTOR DESIGN  
 THAT GIVES YOU**



**INDUSTRIAL  
 QUALITY**

Everything you asked for and more. Smaller, yes...and better, too. Here is traditional Century dependability, smooth-running and quietness under load...now skillfully engineered into the compact new "48-Frame" design.

These great new Century "Industrial Quality" motors are now available in sizes from 1/20 to 1/3 H.P.... developed specially for industrial users.

**ON NEW EQUIPMENT OR  
 FOR REPLACEMENT...**

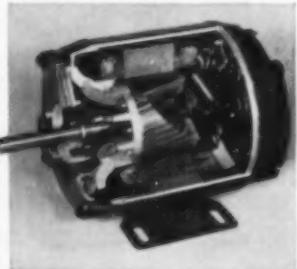
when you see the red "C" on the new weight-saving, space-saving "48-Frame" motors, you're assured of Century's traditional industrial ruggedness. For information and for fast service, call or write your nearby Century District Sales Office or Authorized Distributor.

**We Invite Your Comparison of...**

engineering — Weight savings up to one-third are made possible without "skimping" on the vital "active materials", simply by eliminating dead weight and using new materials. The result is smaller-diameter motors that are not merely "just as good" but actually superior to the famous Century "56-Frame."



design — For time-saving maintenance, "GITS"-type oilers for sleeve bearings are placed high on the end-brackets, allowing easy oiling from either end of the motor... cluster-type integrally cast fan at the rear end of the rotor draws a steady stream of cooling air over the coilheads... "Square" stator iron permits air to pass between the core and shell, cooling the whole width.



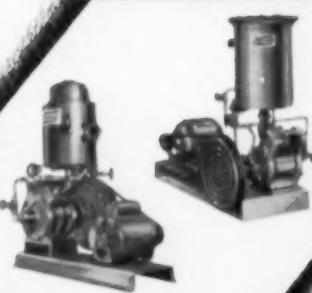
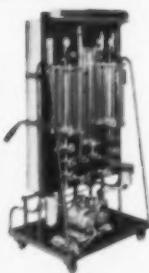
Performance-Rated<sup>®</sup>  
 MOTORS  
 1/20 to 400 H.P.



**CENTURY ELECTRIC COMPANY**

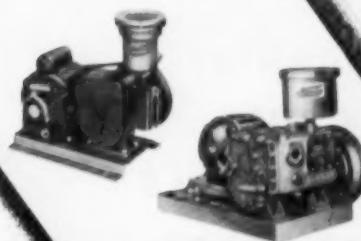
1806 Pine Street • St. Louis 3, Missouri • Offices and Stock Points in Principal Cities  
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FEBRUARY, 1956 • COMMERCIAL REFRIGERATION



Is there a **VACUUM**  
in your **AIR CONDITIONING** needs?

**INNEY**



**You supply the problems —  
Kinney will supply the VACUUMS !**

Kinney Vacuum Pumps are being specified more and more to provide the extremely low pressures required in the manufacturing and servicing of refrigeration and air conditioning equipment. These pumps offer outstanding dependability and efficiency . . . a minimum time requirement to create low absolute pressures . . . and the quick recovery speeds needed for high rates. The Kinney line includes more models, capacities, and types of high vacuum pumps than any other line on the market . . . to meet any laboratory, production-line, or service requirement. If you have a vacuum need, you need Kinney!

District offices in Boston, New York, Philadelphia, Cleveland, Chicago, and Los Angeles are all competently staffed to discuss vacuums . . . and your problem in particular. Call or write us today. Send the coupon for our new Bulletin 403.

\*Please send Bulletin 403 describing the complete line of Kinney Vacuum Pumps . . . designed to meet all refrigeration and air conditioning requirements.

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**KINNEY** MFG. DIVISION  
THE NEW YORK AIR BRAKE COMPANY

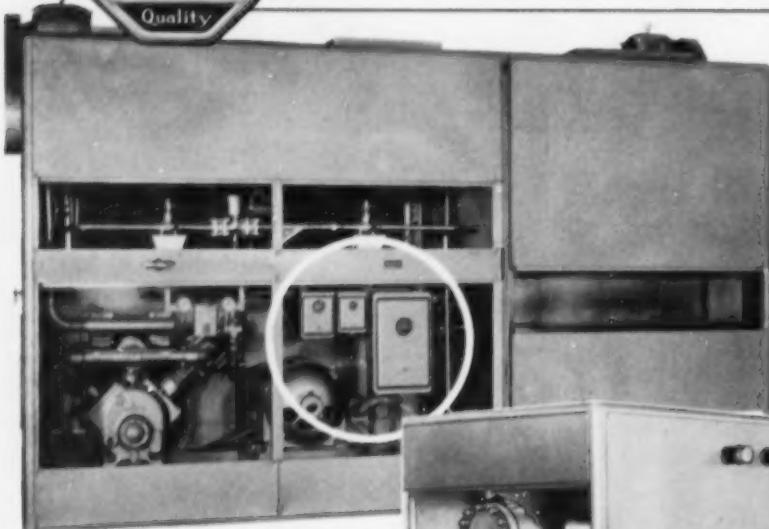
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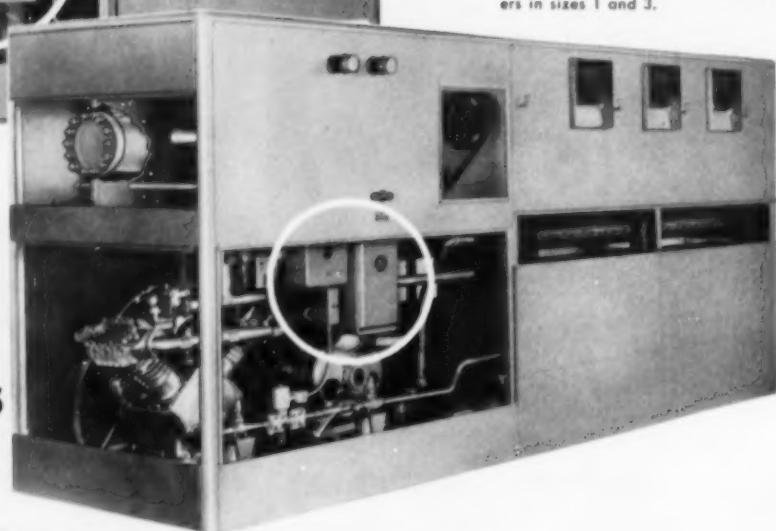
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& AIR CONDITIONING • FEBRUARY, 1956



*The Sign of Quality Motor Control*



Governair model SCU-25, 25-ton packaged air conditioner uses Allen-Bradley Bulletin 709 solenoid starters in sizes 0, 1, and 3.



Governair model PWD-30, 30-ton packaged water chiller uses Allen-Bradley Bulletin 709 solenoid starters in sizes 1 and 3.

**ALLEN-BRADLEY  
TROUBLE FREE  
MOTOR CONTROLS  
ARE "STANDARD"**

**ON GOVERNAIR** *Refrigeration Units*

**REASONS WHY ALLEN-BRADLEY STARTERS ARE FIRST WITH REFRIGERATION AND AIR-CONDITIONING MEN**



**simple  
design**

Only ONE moving part... the secret of trouble free switch operation.



**dependable  
operation**

No pivots, pins, hinges, or friction parts to cause starter trouble.



**maintenance  
free contacts**

Double break, silver alloy contacts never need cleaning or filing.



**reliable over-  
load relays**

Provide continuously reliable motor protection irrespective of service.

Year after year Allen-Bradley controls gain in popularity especially among air-conditioning and refrigeration men... and there are good reasons. Allen-Bradley controls give continuously dependable service without maintenance over long periods of operation.

Extreme simplicity enables Allen-Bradley solenoid starters to provide trouble free service... only ONE moving part.

There are no hinges or pivots to bind

and cause trouble... no pins or bearings to wear. And the cadmium silver alloy contacts never need cleaning, filing, or dressing. You can install Allen-Bradley controls... and forget them. Specify Allen-Bradley control—it stands for millions of trouble free operations.

Allen-Bradley Co., 1340 S. Second St.  
Milwaukee 4, Wis.

In Canada—

Allen-Bradley Canada Ltd., Galt, Ont.

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FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

**ALLEN-BRADLEY**  
SOLENOID MOTOR CONTROL  
QUALITY

# Leading architects, engineers and contractors know this about air conditioning...



Reputation—man's priceless possession!

One of the best ways to maintain your own reputation is to be sure you specify products with good names and performance records. Such a name is AIRTEMP—product of famous Chrysler engineering—for 21 years a leader and pioneer in air conditioning.

AIRTEMP'S advanced engineering and precision manufacturing are your guarantee of outstanding performance. When you deal with AIRTEMP, you get the advisory service of the best engineers of Airtemp Construction Corporation. And you get the follow-through benefit of a nation-wide network of trained service personnel and facilities.

Our representatives will be pleased to advise you on which is the best system for your every purpose. And whenever you specify AIRTEMP, you can rest assured your clients will be happy. They will find that operating costs are unusually low—thanks to efficient, modern AIRTEMP design.

*Write for full information.* For complete details on what AIRTEMP offers you, write to: Airtemp Construction Corporation, Dayton 1, Ohio.

**Airtemp Builds Air Conditioning  
To Fit Every Requirement**



THE FORWARD  
LOOK IN  
AIR CONDITIONING

AIR CONDITIONING • HEATING FOR HOMES,  
BUSINESS, INDUSTRY

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You always protect  
your reputation  
when you specify  
the brand that has an  
outstanding reputation

**Airtemp**  
COMMERCIAL AND INDUSTRIAL  
AIR CONDITIONING

From installations like these  
comes convincing proof of  
Airtemp dependability!

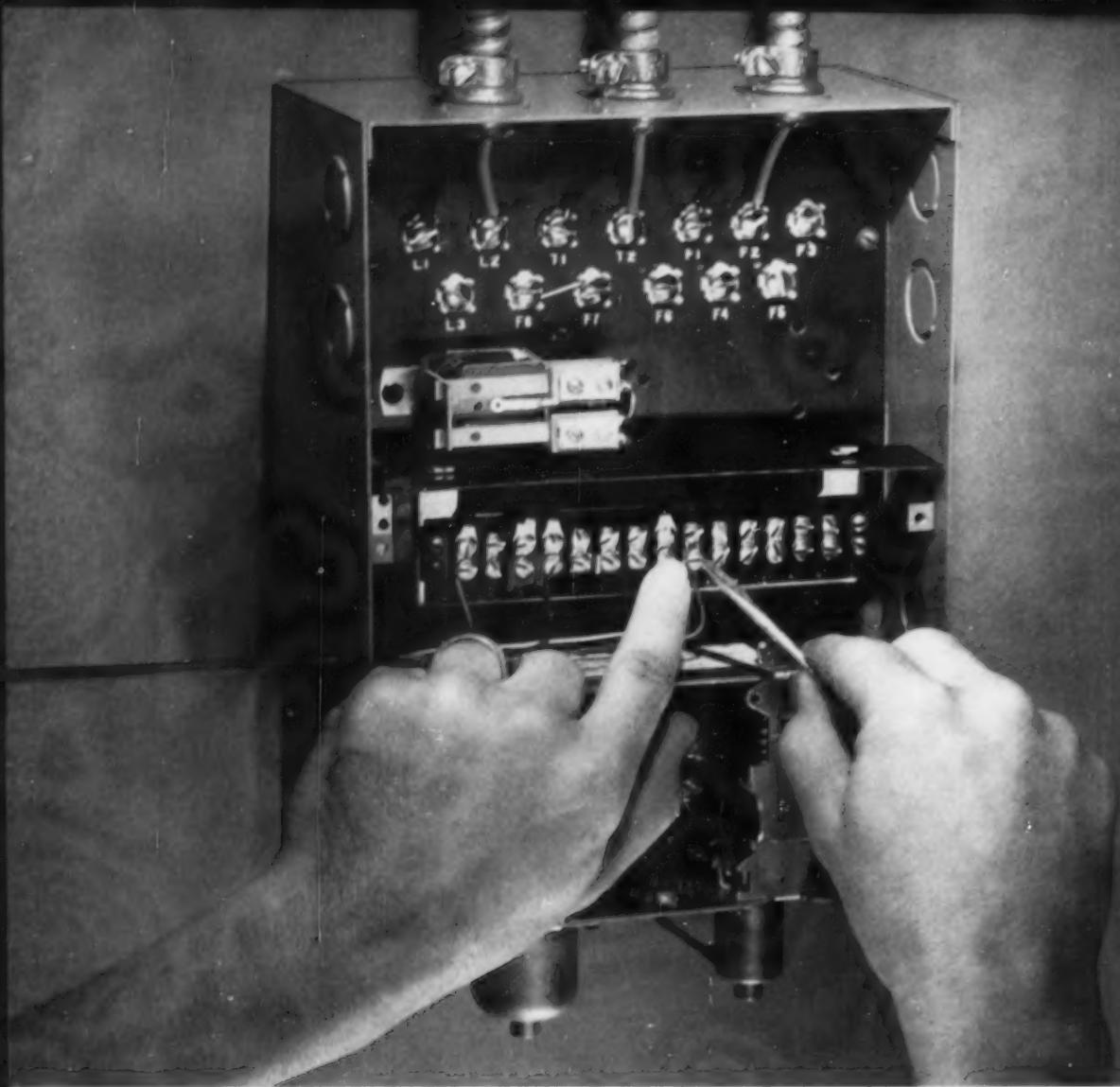


**TITLE GUARANTY BUILDING,**  
St. Louis, Mo. Architect:  
Raymond E. Maritz; Con-  
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Weil and W. B. Moses;  
Mech. Engineers: Brussel &  
Viterbo; Air Conditioning  
Contractors: General In-  
stallation.



**COMMERCE COURTS**  
(Office Building) Commerce  
Court and Raymond Blvd.,  
Newark, N. J. Architect and  
Engineer: Henry Boyer

**Airtemp**  
CONSTRUCTION  
CORPORATION  
SUBSIDIARY OF CHRYSLER CORP.



## ONE-UNIT AIR CONDITIONING CONTROL SIMPLIFIES WIRING

In the new Penn Series 753 air conditioning control center, all functions are centralized in one compact unit. There are 14 low voltage terminals for both heating and cooling . . . so all wiring is simplified by centering it into one unit. There is no need for additional connection or junction boxes. Also reducing wiring problems are the built-in high and low pressure cut-out controls.

And, there are advantages for the manufacturer, too. For example, the Series 753 has detachable bellows which permit pre-assembly of pressure elements into hermetic systems. To be sure you're getting the best, look for the Penn Series 753 on the self-contained package air conditioning units you buy and install for either residential or commercial applications.

See how easy it is to make wiring connections in the Series 753 . . . both line and low voltage terminals are easily accessible in this "clean-cut" panel assembly.



Exterior view of Series 753 residential air conditioning control center.

**PENN CONTROLS, INC.**

Goshen, Indiana

Automatic Controls For Heating, Refrigeration, Air Conditioning,  
Gas Appliances, Pumps, Air Compressors, Engines

# BTU'S

## TRENDS · OPINIONS · REPORTS

**A MINOR BOOM** in orders for air conditioning equipment appears to be developing among military facilities, in the experience of Drayer-Hanson, Inc. The company reports no less than 10 separate orders from installations from all parts of the country in a recent period. Included were air handling units for ordnance storage area facilities, readiness crew buildings, a base operation and control tower, and other types of Army, Navy and Air Force facilities. Bases included the Naval Air Station, Jacksonville, Fla.; Abilene (Tex.) Air Force Base; Laughlin Air Force Base, Del Rio, Tex.; James Connally Air Force Base, Waco; Walker Air Force Base, Roswell, N. M.; Yuma (Ariz.) County Air Base; and in California, the Douglas-Convair Joint Facilities, and the Edwards, Castle and Fairfield Air Force Bases.

**POOR REPORT CARDS** might be blamed on the heat, not the homework. According to Zephyrin A. Marsh, an expert on heating and parenthood (seven children) overheated classrooms in most of the nation's schools are dulling the learning capacity of grade school children. The problem in schools in this and any winter, he said, is not one of heating but of cooling. Marsh pointed out that 20 to 30 youngsters packed into an average classroom will generate enough excess body heat to warm a five-room house in freezing weather. This overheating, he contends, is what makes pupils drowsy, inattentive, and difficult to instruct. Marsh is director of Minneapolis-Honeywell's school activities.

**A NEW METHOD** of shipping frozen foods to foreign countries without subjecting them to refrigeration en route has been developed by W. L. Morrison for Libby, McNeill & Libby. Called "Super Chill", the new process utilizes liquified nitrogen to reduce temperature of frozen food packages to -150 F before enclosing them in a sealed aluminum cube shipping container. According to tests, cartons can remain un-refrigerated for 40 to 41 days before the temperature goes from -150 F to zero. For domestic applications, temperature of packages would be brought down only to -50 F or -80 F in view of the shorter distances involved.

**A DEFINITE CHANGE** in the buying pattern of air conditioning units, indicating a trend toward stabilization of the industry, is reported by Bernard A. Mitchell, president of Mitchell Mfg. Co. Mitchell bases his statement on a 3-year market survey conducted by his company which shows a positive extension of the selling season. Peak selling months, he says, have shifted to July and August, while volume sales were being made as early as January during 1955. He also predicts that prices of room air conditioners will be firmer in 1956.

**EXPANDING AIRPORT FACILITIES** required to handle the growing volume of air traffic provide an ever-increasing market for commercial refrigeration equipment. A typical example is the London (England) airport where extensive construction is now in progress. An estimated 2,250,000 passengers were handled there during 1955, making necessary the addition of new facilities for food and refreshments. This has resulted in the installation of a large number of refrigeration units, including cold rooms, bottle coolers, ice-making service cabinets, ice cream cabinets, and domestic-type refrigerators.

**NOT QUITE FREE . . .** but almost impossible to find on the expense ledger, is the year 'round air conditioning system in the offices of the Cowles Chemical Co.'s new building at Skaneateles Falls, N. Y. The company's engineers discovered they could use cold well water for warm weather cooling, before it was used as a cooling medium in one of the production processes, and this same water for winter heating, after it had absorbed heat in the manufacturing process. The process is involved in the production of Drymet, an alkaline cleaner used as a raw material for many special cleaning compounds.

# Proper Mechanical Planning

## OF FOOD STORE INSTALLATIONS

by Art Perez

Chief Administrative Engineer, Tyler Refrigeration Corp.\*

**S**TORE planning for the modern food market is a comprehensive project that poses two entirely different sets of problems—merchandising and mechanical—which must be solved satisfactorily if the store is to produce maximum profit for the operator and prove a credit to the commercial refrigeration dealer who sells and installs the equipment.

The merchandising problems generally are the primary concern of the food store operator. These are the problems which directly involve the type and quantity of fixtures and shelving to be installed, the location of these display and merchandising units, and the nature and location of facilities for the storage, processing, and handling of foodstuffs and other merchandise.

Every qualified commercial refrigeration dealer or distributor, of course, must be prepared to offer—

*Whether you sell just one case or a complete supermarket job, here are some questions you should be able to answer before a single piece of equipment is delivered:*

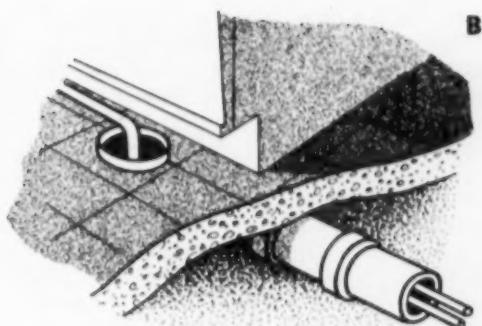
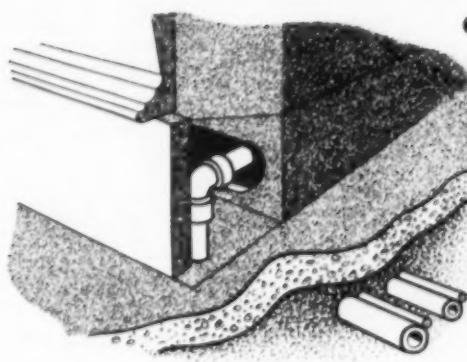
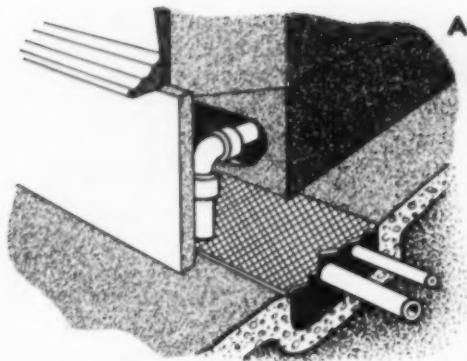
- *How should the refrigerant lines be run?*
- *What provisions must be made for proper drainage?*
- *Is the existing electrical supply adequate?*
- *Where can the condensing units be located?*

either on his own or through his manufacturer—a complete store planning service. Usually, however, the store management itself has some rather sharply defined ideas on this phase of store planning, so the thinking of the dealer must be integrated with that of the operator so as to achieve the most effective arrangement of equipment and facilities in terms of the operator's ultimate aims and interests.

The mechanical problems, on the other hand, more often become primarily the responsibility of the dealer, for in this area his knowledge and experience generally far overshadows that of the store owner or manager. These problems involve the questions of how the three basic utilities—refrigeration, water (both supply and drain), and electricity—can best be provided and connected to the necessary fixtures and fa-

\*Prior to assuming this new executive position early in 1955, Perez had spent six years as service manager for the Tyler organization. Before that he had operated his own service business in New

Orleans. Consequently, his discussion of this subject is based on sound, practical field experience with food store installations as seen from "both sides of the fence".

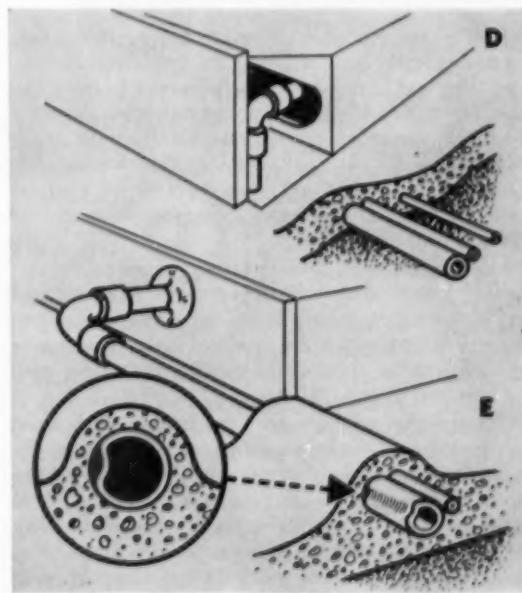


**RIGHT WAY to install refrigerant lines: (A)**

Most popular and versatile method is trenching, with steel plate used to cover exposed portions of trench. (B) Use of clay tile as conduit for lines also is common. This eliminates open trenching, but requires more accurate planning of fixture connections and access points. (C) Laying lines in earth beneath the floor is neatest and least expensive method, but must be done before floor is poured and consequently necessitates the most accurate planning of all.

**WRONG WAY to install refrigerant lines: (D)**

Embedding tubing in concrete can mean costly and troublesome tearing up of floor in case of mechanical failure. (E) Mounding concrete over lines laid along surface of floor not only provides an obstacle to aisle traffic but also, as in the case of any refrigerant line in concrete, subjects tubing to danger of mechanical collapse (see inset) as result of accumulating ice formation on exterior wall of tubing.



cilities most economically and efficiently and, in the case of an existing market, with the least possible disruption of the store's operations.

To some extent mechanical problems even influence the placement of equipment in the merchandising and storage areas, and a compromise must be worked out between the most effective location from a merchandising or operating standpoint and the most efficient location mechanically speaking.

All of these factors must be taken into consideration regardless of the size of the store. Attention to detail in the planning of these facilities is equally important, whether the dealer is installing just a case or two in a corner grocery or a complete supermarket job. Improper handling of these phases of an installation can result in excessive maintenance costs and shortened equipment life for the food store operator, and in expensive alterations and possibly even a lost customer for the refrigeration dealer.

Just how important are these mechanical phases of food store planning? Most large market operators consider them so important that many hours are spent poring over the details before a single move is made to build a new store or remodel an old one. They well realize that without such planning, the result might be a very unsatisfactory merchandising area abounding with such hazards as poorly placed lines or drains which might, in extreme cases, even prove to be obstacles to customer traffic.

If such matters are regarded so importantly by the large food store operators, who devote such a great amount of time to scientific study of the requirements of their markets, then certainly they are of equal or even greater importance to the operator of the small store, whose space is more curtailed, whose capital is

more limited, and who is less able in every way to withstand the burden of costly installation revisions or excessive equipment maintenance which all too often are the price which must be paid for poor mechanical planning.

For these reasons, it definitely should be the obligation of every commercial refrigeration dealer to delegate to someone in his organization the authority and the responsibility for planning the mechanical details of every food store installation, regardless of the size of the market or how much equipment is involved in the sale. It should be the duty of this individual to check the site of every installation, after the sale is made and before the equipment is delivered, in order to obtain all of the necessary information to assure proper mechanical planning, and to make sure that the customer thoroughly understands any structural alterations which may have to be made.

Some sort of a printed report form, providing space for detailed notations on refrigeration, plumbing, and electrical phases of each installation, might prove exceedingly helpful in passing this information along through the proper channels.

For a more detailed discussion of some of the specific problems and solutions involved in the three major mechanical phases of food store installations, it would seem best to examine these factors separately, one at a time.

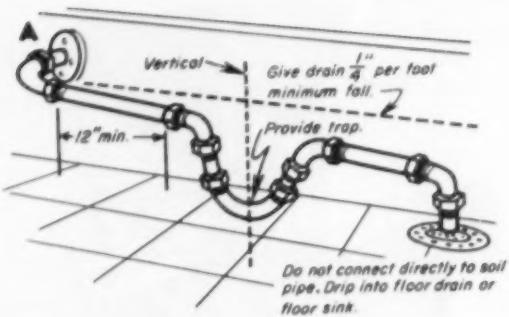
#### Use Preferred Methods in Laying Lines

Refrigeration piping of course is a primary consideration in the installation of any refrigerated equipment. A number of various methods can be used successfully in running the refrigeration piping from the machinery room to the various fixtures. The really important thing, of course, is to see to it that the most advantageous method has been carefully selected beforehand and that the necessary provisions have been made to accomplish it.

Such things as refrigerant lines running on the surface of a floor without any protection from traffic—and unfortunately you still see such practices on occasion—definitely are the result of poor planning or no consideration at all of the requirements for a modern commercial installation.

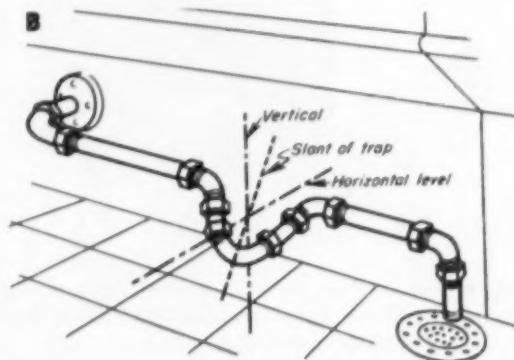
Among other unsatisfactory practices in this respect are the burying of refrigerant lines in concrete or the mounding of concrete over tubing that has been run on the surface of a concrete floor. In either case there is the ever present possibility that an expansion valve might be frozen open or otherwise become inoperative to such an extent as to result in considerable frost-back from the case. In such a situation, the suction line which is below the freezing point of water will collect ice on its external surface. The gradual build-up of this ice deposit, if allowed to continue long enough, eventually will cause mechanical collapsing of the tubing.

This is no theoretical situation. Actual field experience has shown that in numerous installations where this practice has been employed several years



#### RIGHT WAY to install equipment drains: (A)

All drain pipe and fittings must have at least 1" inside diameter. Every line connected directly to a case must have minimum slope of  $1/4$ " per foot. Drain line never should be connected directly to soil pipe, but should be allowed to drip into floor drain or sink. On low temperature equipment a trap must be installed at least 12" away from fixture. (B) If drain outlet from case is too close to floor to allow for trap, trap may be tilted outward from vertical, just as long as top of bottom ell is below bottom of outlet pipe.

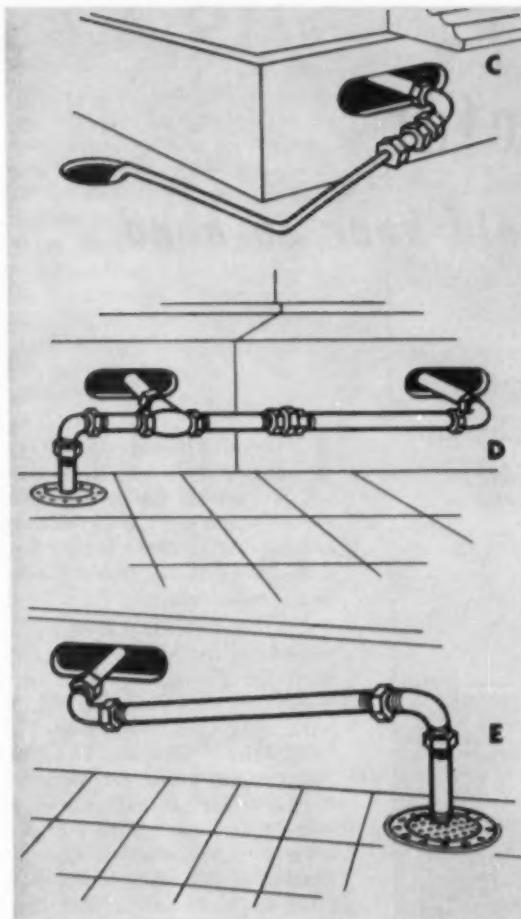


of satisfactory system operation have ended in the need for tearing out the old refrigerant lines and completely re-piping the job.

Perhaps planning of the piping for a refrigeration system might sound like a complicated task requiring reams of blueprints prepared by a licensed professional engineer. Nothing could be further from the fact, since actually it involves nothing more than some provision for getting the necessary runs of tubing from one place to another. There are numerous satisfactory ways of accomplishing this, all of which have been practiced successfully, either singly or in combination.

Among the methods most commonly employed, probably the most popular and versatile is trenching. In this method, an actual trench of the required size is provided in the floor, and the refrigerant lines are then laid in this trench. This trench can be prepared below the utility recess provided by most commercial refrigerator manufacturers in their products. Thus this trenching, covered either by a base plate or by a separate steel cover plate, makes it possible to run the piping to the fixtures with maximum ease.

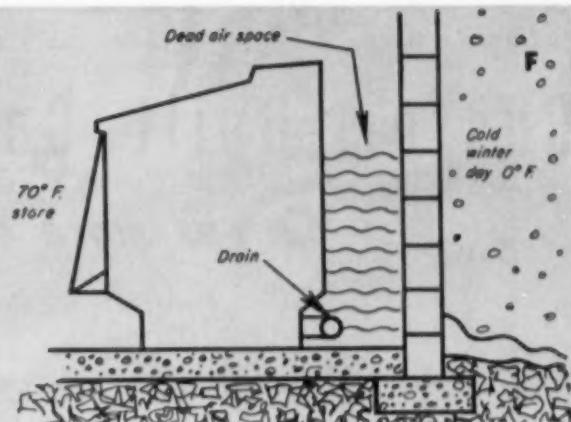
Here is one word of caution, however. If trenching



**WRONG WAY to install equipment drains: (C)**  
 Drain lines run in small diameter copper tubing restrict flow of drain water. (D) Lines feed directly from one case to another and then into common drain prevent any slope in line between the two cases. (E) Drains like this are useless, for water simply will not run uphill. (F) If drain line is run in dead air space between case and outside wall, some method of heat must be provided to keep drain water from freezing. In extreme cases, freezing of condensation on exterior surface of drain line will cause buildup of solid ice deposit between fixture and wall.

is used other than under the refrigerators, the steel plate required to cover the trench might create some annoyance as a result of the noise caused when the wheels of shopping carts are rolled over it. Because of this fact, a conduit such as clay tile is frequently used in connection with the trenching to carry the lines across aisles and other open areas. This conduit can then be cemented over without imbedding the lines themselves in concrete.

Another method commonly employed is the use of tile throughout, with no open trenching whatever. With this method, of course, it is necessary to provide an access opening for refrigerant lines to be brought up



to each display case or to any other points where access might be required for such purposes as making joints. This method requires more accurate planning than either the straight trench method or the combination trench-and-tile method, since it is desirable to have the openings located exactly at the points where the refrigerant lines lead into the various fixtures. Furthermore, it is sometimes difficult, when using the all-tile system, to readily provide for making the necessary weld joints in the tubing.

A third method of running lines that is often employed, particularly in extremely large stores, is the pipe-in-soil method. With this system it is necessary for the refrigeration dealer to lay the refrigerant tubing even before the concrete floor is poured. As in the case where tile is used throughout, the accuracy of locating stub-ups which will protrude through the finished floor for connection to the fixtures is extremely important. Also, with this method, it generally is felt necessary to test the piping thoroughly before the concrete is poured.

#### **Don't Overlook Importance of Drains**

All in all, this is probably the cleanest method for getting pipe from one place to another. It is thus popular where a large number of fixtures is involved, as in a complete supermarket installation.

It is not possible to say which of these three methods of running refrigeration lines is the best to use. Each method has its own particular advantages and disadvantages, yet each has been proven satisfactory through actual service in the field. The choice of any one of these methods depends upon circumstances and the particular peculiarities of the installation involved.

Providing water supply lines to water-cooled condensers seldom poses any problem. Water usually is readily available and can be piped to wherever the machine room may be located, without passing through any of the sales area of the market.

The problem of providing proper drains for refrigerated equipment, on the other hand, is unquestionably the biggest single problem involved in the whole

*Continued on page 82*

# Custom-Built Cooler

*keeps more cold beer on hand . . .*

Two refrigeration firms joined forces to construct this reach-in walk-in unit expressly tailored to the beverage merchandising of an Arizona market operator.



AS CUSTOMERS SEE IT (top), this specially built beverage merchandising unit is an attractive reach-in case combining maximum display with easy access. Note ledge for stacking warm beer beneath service doors. From the operator's standpoint (bottom), the walk-in area located immediately behind the display shelves provides ample storage space for bulk pre-cooling of beer and other beverages.

In planning his supermarket layout two years ago, H. N. Keeton Sr., decided that he wanted a specially-built refrigerator display case so that he could feature pre-cooled beer in his Neb's Market in Phoenix, Ariz.

His theory was that most supermarkets in the Valley of the Sun were not pre-cooling their beer stocks long enough, depending instead upon open-type refrigerated cases with limited space. To assure 72-hour pre-cooling for his beer, Keeton decided to have a walk-in beer display case custom built for his store, based on a floor space allocation of 156 sq. ft. of the total 6000 sq. ft. of selling floor area available.

He sent his son and partner, H. N. Keeton, Jr., to consult with engineers of City Refrigerator Co. of Los Angeles, which specializes in the construction and installation of commercial refrigeration cabinets and units. Working together, they came up with an adaptation of a walk-in dairy case, quite popular on the coast.

Among the features of the attractive 13 x 12 x 8½' refrigerator, as it was finally installed, are six pull-out glass doors (23" wide and 54" high) with coolproof handles; four horizontal steel shelves, each 2' wide; seven 4' vertical fluorescent lights, one at each end and one between each pair of doors for evenly distributed illumination; and an outside display ledge below, measuring 13' x 1', for the display of warm beer in six-pack cartons. Each glass door can be shut almost automatically by finger tip control.

Access to the storage area was provided by means of a side door. Inside the walk-in, storage space totaling 13 x 10 x 8½ is available, not only for the holding of cases of beer but also for the storage of eggs and cheese. Design of this combination walk-in and reach-in cooler facilitates controlled rotation of the beverages, as depleted stock on the shelves can be replenished from the inside, thereby assuring freshness and a constant stock of merchandise that has been cooled for 72 hours.

#### Forced Draft Used

Exterior of the cabinet was finished in bleached white birch.

Having arranged for the design and construction of the cooler itself, the younger Keeton then turned his attention to the problem of providing it with adequate cooling capacity. Similarly sized package units on the market at that time using gravity-type coils did not provide sufficiently rapid cooling to assure the 72-hour period of refrigeration desired by the Keetons.

The Ace Lance Co. of Phoenix, a commercial refrigeration concern approached by the Keetons on this problem, came up with the promising suggestion of trying forced draft cooling. So this company was given the assignment of installing the refrigerating equipment. The outcome was a system composed of a 2-hp twin-coil compressor with a capacity of 15,000 Btu, plus the added feature of two blowers located at each end of the box to guarantee sufficient circulation.

#### 36 F Maintained

Result of this combined effort is a cooler providing the steadily-maintained 36 F temperature needed for the pre-cooling of the beverage. From 75 to 100 cases of pre-cooled canned and bottled beer are on display at all times, with complete turnover of shelf stock coming about three times weekly. In addition, cases of beer are stacked inside the cooler awaiting

(Continued on page 81)

**WELCOME SIGN**  
to weary travelers (below) is lettered on the door of the closet containing the automatic ice cuber installed at Cincinnati's modern new Town Center Motel.

#### ICE CUBES

**HOT OFF THE ROAD.** one of the motel's guests helps himself to a supply of ice cubes which are provided with the compliments of the management.



## A Growing Ice Cuber Market

WITH competition currently hot and heavy in the motel business, and with newer and more elaborate units opening up all the time, motel operators all over the country are digging deep into their bags of promotional tricks for new facilities or services that will help them win at least their share of the motoring trade.

Air conditioning now has reached the point of general acceptance, so that in most sections of the country it is no longer profitable to plan a new motel that can't include those magic words in its advertising. Another customer service which is becoming increasingly popular, but is by no means universal, is the installation of automatic ice cubers to provide a continual supply of free ice cubes for the comfort and convenience of motel guests.

At the Town Center Motel, opened a couple of years ago in Cincinnati, Ohio, an automatic ice cuber was one of the customer attractions provided for in the original planning of the building. The ice maker, a Carrier unit with a capacity of 450 pounds of cubes per day, was sold to the motel's management by Cincinnati Air Conditioning Co. Since then, according to Ivan Walter, manager of the firm's commercial refrigeration department, the company has sold two or three more such units to other enterprising motel operators.

At the Town Center, it was first planned to locate the ice cuber on a sheltered patio section of the motel's court, and appropriate wiring and plumbing were provided at this spot. Later, however, it was realized that the ice cuber would be a popular attraction even during the winter months, so a more protected location was sought.

Fortunately, a heated utility closet, complete with water and electrical connections, had been provided on the opposite side of the court, and it was discovered that the ice cuber would fit perfectly into this new location.

The result? "Our guests really appreciate this service," beams general manager Charles E. Georgi, "and take full advantage of it all year around. Of course, the hot days of summer are when the ice cuber gets its heaviest play. Why, at about 4 o'clock in the afternoon often we see our guests, just in from sweltering hours of driving on the hot highways, actually start lining up at this machine. That's when we fully realize what a good investment that ice cuber was!"

# "NON-COMMERCIAL" DISPLAYS

*pay off in added equipment sales . . .*

A Denver dealer  
finds that supplying  
cases for "institutional"  
promotions means more  
money in the bank

WILLINGNESS to invest extra hours and added efforts in the setting up of unusual displays of commercial refrigerated cases at every opportunity is a policy which has paid excellent dividends in added sales volume for Herman H. Stone of Capitol Fixtures and Supply Co., Denver, Colo.

Stone, a veteran of more than 25 years in the commercial refrigeration field, keeps a sharp eye out for any sort of function into which a display of self-service refrigerated cases can conceivably fit. Whenever such an opportunity

arises, he makes sure that a new, eye-appealing case is on hand even though the function may last only a few hours.

Typical such events include conventions, sales meetings of food processing organizations, and public showings of new food products which require refrigerated display. Less typical are parties given by food manufacturers or distributors which require handy refrigeration of the food served and "open houses" in similar situations.

An example of Stone's aggressive endeavors along this line was the recent open house held by K & B Packing Co., of Denver. This model plant, which has served as the basis for the design of other smoked luncheon meat processing plants in the nation, was celebrating its second anniversary for a period of only three hours, from 2 to 5 o'clock in the afternoon.

Upon finding that the packing company had invited some 700 retailers of its products to the function, along with the governor, mayor, and other dignitaries, Stone asked for permission to display a 10' self-service refrigerated case in one of the packing plant's processing rooms. He pointed out that K & B's luncheon meats would make a better impression on visiting guests if they were displayed exactly as they would be in the retail store.

As a result of this convincing argument, he won permission to

*Continued on page 81*



**THE DISPLAY IS FOR FREE**, but the resulting equipment sales more than cover the costs. Herman Stone set up this 3-hour display for an "open house" staged by a local meat packer, and cashed in to the tune of 24 actual orders and 100 good prospects.

IN THE DAYTON-BILTMORE HOTEL...  
(A HILTON HOTEL)



*The chilled water supply and return lines in basement are 3, 4, and 5 inch Chase Copper Water Tube and Solder Joint Fittings. Gate valves also by Chase.*

AIR CONDITIONING WITH CHASE<sup>®</sup> TYPE L  
COPPER WATER TUBE *Exclusively!*

It's another 100% Chase job! From roof to basement, the new air conditioning installation at the Dayton-Biltmore Hotel used over 20,000 feet of Chase Type L Copper Water Tube and more than \$3,000 worth of Fittings.

As in other refrigeration installations, Chase Copper Tube and Fittings saved time and labor for the Dayton-Biltmore's air conditioning contractor, the York Corporation. That's because the precise tolerances of Chase Type L Tube and Solder Joint Fittings assure quick, accurate assembly and a pressure-tight system.

You can get hard temper Chase Type L in  $\frac{1}{4}$ " to 12" sizes. Comes in 20 foot lengths. Order today from the Chase Wholesaler nearest you!

**Chase**   
BRASS & COPPER CO.  
WATERBURY 20, CONNECTICUT  
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

*The Nation's Headquarters for Brass & Copper*

Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Grand Rapids Houston Indianapolis Kansas City, Mo. Los Angeles  
Milwaukee Minneapolis Newark New Orleans New York Philadelphia Pittsburgh Providence Rochester St. Louis San Francisco Seattle Waterbury

Circle No. 36 on Reader Service Card

& AIR CONDITIONING • FEBRUARY, 1956

# "PUSH- THROUGH" PRODUCE CASES

*simplify market's restocking problems*

**M**AXIMUM refrigeration protection for all produce, as well as the elimination of many waste steps and considerable lost motion, has been achieved as the result of a novel installation at the new Kwik-Chek supermarket in the Normandale shopping center, Montgomery, Ala.



FULLY STOCKED DISPLAYS of fresh produce at all times are made possible in this market by specially adapted self-service cabinets.

In planning the store's produce department, manager Ralph Kononen laid out the produce sales department and the produce preparation room back to back, with a "suspended wall" between them. The merchandising area is 90' long by 20' wide, with 80' of continuous self-service display cases

ranged along one side. The preparation room, of exactly the same dimensions, is concealed immediately behind the suspended partition which backs up the display cases.

This suspended wall or partition is the key to the entire operation. It drops down from the ceiling to a point just 3' short of the floor. The produce cases themselves were especially adapted for this application, with their lower sections being eliminated and the display portion of the cases being supported on posts instead of the usual steel frames. The hinged doors constituting the front facing of these cases provide access into an unobstructed area which opens directly into the preparation room, beneath the lower edge of the suspended partition.



RESTOCKING of produce cases is facilitated by the "pass-through" area provided beneath the self-service displays. In photo at upper left, clerk handles produce through the access doors which form the front of the cases. Lower right photo shows how this pass-through area beneath the cases enters directly into the produce preparation room behind the suspended partition.

The preparation room is equipped with sinks, work benches, and a 12' x 12' walk-in cooler. This cooler, located at the extreme front of the room, is large enough to accommodate a full two-day stock of produce. Temperature in the cooler is maintained at between 36 and 38 F. A stand-by compressor is provided for emergency use.

As this produce handling system actually operates, it requires only a few seconds to move any refrigerated produce item from the walk-in cooler to the refrigerated display cases. A lug of tomatoes or a crate of melons, for instance, can be simply passed in a straight line from the preparation department, under the suspended partition, and into the open area beneath the produce cases. From this point, a clerk can readily reach it through the hinged doors and proceed to restock the displays as necessary.

#### Intercom System Helps

Either manager Kononen or a checker, standing at one of two produce check stands at the rear of the department, can keep an eye on the amount of stock on display. Using an intercommunication system he then can order replacement stocks of produce brought out as the original merchandise is sold.

To make it simpler for the employees working in the preparation room to push their crates of produce through under the self-service cases at the proper point, signs are affixed to the bottom of the suspended partition on the preparation room side indicating the approximate position of the various produce items in the display cases on the other side of the wall. As a result, when employees in the sales area need replacement stock it always appears, almost as if by magic, through the wall. And, since it is only exposed for a few seconds to unrefrigerated conditions, there is little opportunity for discoloration or other spoilage.

Empty crates, baskets, and other containers are shoved back through the pass-through area just as soon as their contents are transferred to the display cases, and this contributes to the neatness of the merchandising area.



**MAXIMUM EFFICIENCY** is obtained from this extensive fleet of service vehicles operated by Dixie Electric Co. through the use of two-way radio.

## Two-Way Radio: Two-Way Help

**T**WO-WAY radio is a two-way time and money saver for Dixie Electric Co., Montgomery, Ala., refrigeration and air conditioning contractor and service firm. Besides saving time on service calls and making equipment maintenance more efficient and more profitable, Dixie Electric's \$6000 UHF intercommunication system has also enabled installation experts to "borrow some help" when an emergency arises in this department.

Speed and economy are of highest importance in today's servicing operations, believes Dixie Electric's president, J. Noble Crump. Two-way radio for the company's 17 service trucks was decided upon after several years of experimentation with telephone relay systems of various types.

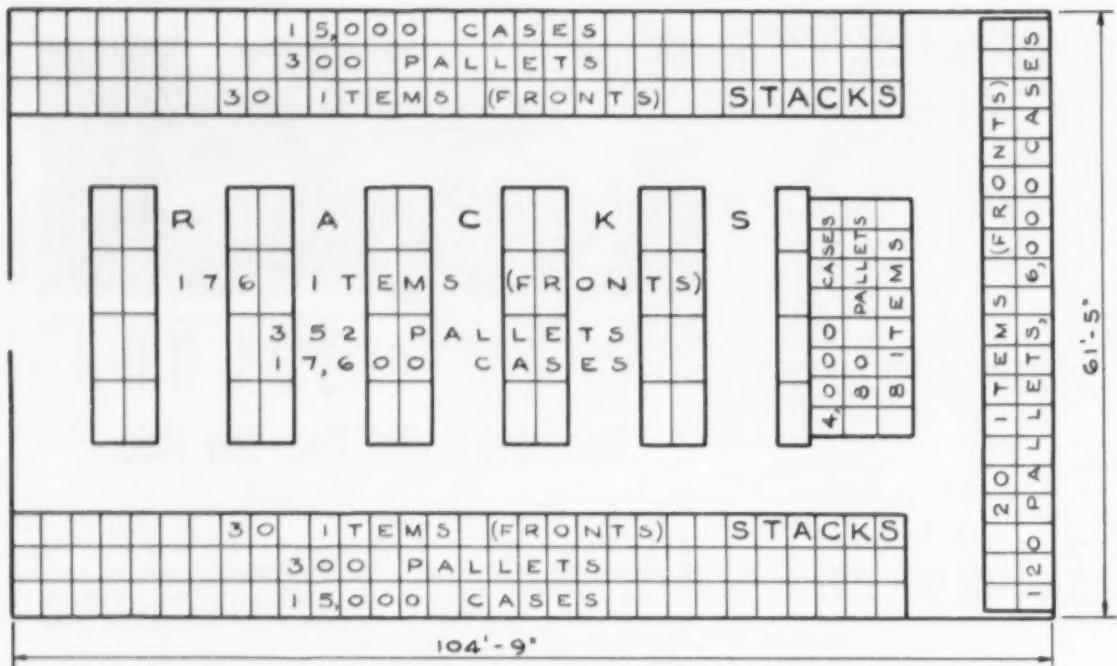
Each service truck operates in a designated area, with the city divided into zones which can be served by a single truck and crew. Size of the zones varies from an area 30 blocks square to one 75 blocks square, depending upon the population. Service trucks cruise each area, and are within minutes of any call they may get.

"All too often, when we were using the telephone relay system," Crump said, "we would dispatch a mechanic from one section of the city to another, and then a call would come in from within a few blocks of where he had called in. So he'd have to cross the city twice to handle both calls."

"With the radio system and our area plan, we can route all calls in turn, except for emergencies, and reduce mileage to an absolute minimum." Routing is handled from a transmitter in the company's headquarters in downtown Montgomery.

Saving on installation time and costs (the company handles a lot of residential air conditioning work) is made possible by two-way conversation between trucks. A mechanic who finds he's short on parts to finish a certain job can "borrow help" from a service truck in the area without reporting to the downtown stockroom, or calling for "hot-shot" emergency service. Also, on residential air conditioning installations, if unexpected problems are encountered the crew foreman can check with Frank Jehle, installation supervisor, and settle the matter without leaving the job site. This saves many man-hours per day, and eliminates most costly errors and adjustments.

With UHF transmission guaranteeing against interference from taxi fleets, police radio, and other low-frequency bands, Dixie Electric finds it can control its truck fleet efficiently over a 15-mile radius, and that contact with its 17 service trucks can be easily maintained "when we need it most".



**THERE'S NO WASTE** space in this freezer room, yet it will handle a \$140,000 inventory efficiently.

## HOW TO FIGURE FREEZER SPACE

Here's a formula that will help you fit your customer's low-temperature room to his actual food storage needs

**H**OW much freezer space?"

That's a tricky question, and one that the contractor or dealer who does any considerable amount of work in the wholesale food field can expect to hear more and more frequently from now on. Both food distributors and wholesale grocers are becoming increasingly important prospects for their own frozen food storage facilities.

Up to now, food distributors, for the most part, have been leasing freezer space in public warehouses. And wholesale grocers haven't made a practice of stocking frozen foods. Their warehouses have been devoted to normal temperature refrigerated space and to storage of dry groceries requiring no refrigeration. But the frozen foods business has grown so much in volume that both of these businesses can now afford to operate their own freezer warehouses.

Both are faced with a lack of precedent concerning the amount of freezer space they should construct. And, in his conversations with them concerning their re-

quirements, the refrigeration contractor may be asked to suggest not only how much low-temperature equipment they will need, but also how big the freezer room itself should be built.

Here's a way of figuring freezer space that has been developed by the Ballinger-Meserole Co., warehousing consultants and planners. The formula can be applied to any size frozen food operation.

Suppose, for example, the inventory of frozen foods amounts to 175 items and \$140,000 worth of goods.

If this inventory is average in spread (175 different items) and in amount per item, the average case will be worth just about \$3.50. This will be true, according to James M. McKay of Ballinger-Meserole, in big chain distribution centers as well as in independent and retailer-owned warehouses.

However, it is always a good practice, before accepting this figure, to ask the distributor or wholesale grocer if his dollars-per-case figure is different. An

(Continued on page 60)

No need for knees when  
BENDING \*



Save your energy! Use dead-soft DRYSEAL. You can make the most intricate bends with your fingers . . . no tools of any kind required. And its ductility and special temper make it extremely easy to flare for compression fittings without danger of splitting. To make sure you get a tube that is free of even the slightest trace of dirt or moisture we double crimp DRYSEAL on both ends, at the factory. This is the final step in manufacturing, immediately following a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube. This double crimping does not interfere with installation for it is made in such a way that it permits DRYSEAL to be passed through any opening large enough for the tube itself. Tube sizes— $\frac{1}{8}$ " to  $\frac{3}{4}$ " O.D. The DRYSEAL carton, attractively designed for easy identification, contains one 50-foot coil . . . is easier to handle, light weight, economical and sturdily made to assure protection of the tube in stock and in transit.

**REVERE**  
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801  
230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.;  
Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.  
Sales Offices in Principal Cities, Distributors Everywhere.

Circle No. 37 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956

\* **REVERE**  
DRYSEAL  
COPPER  
REFRIGERATION  
TUBE

# CONTRACTORS

## NEWS • ACTIVITIES • PLANS

### Creative Selling Seen as Best Way To Build More Contractor Profits

**T**o operate profitably, the refrigeration and air conditioning contractor must offer a combination of sales, engineering, installation and service, coupled with much hard work and financial horse sense.

Speaking at the recent RACCA annual meeting in Atlantic City, M. T. Firestone, New York regional manager of Typhoon Air Conditioning Co., made the above statement, and added that "whether your business is in the thousand or million dollar class, this pattern is basic and must be followed if an operation is to succeed."

By-passing the subject of hard work, which (he said) contractors already knew enough about, Firestone went on to say the following about the application to ingenuity and resourcefulness to air conditioning and refrigeration contracting and merchandising:

"The initial expansion of our business was, in large measure, due to creative selling and good customer relations. Close adherence to these principles helped to build your business and will help you to retain your legitimate place in it.

"Creative selling is just the opposite of bidding. In creating a sale, you are dealing with a private prospect whom you are able to influence and motivate. In bidding on a job, you are merely appealing to a public prospect who has no interest in you other than your figures.

"In between bidding on plan and specification jobs, do some creative selling and thereby create some profitable private prospects of your own. Seek out new application opportunities, particularly in industry. . . . Broaden your horizons.

"If you are worried about competition—and who isn't—you can confound price comparisons with your competitors by offering your prospects the many services you are capable of performing. The more services you furnish your prospects, the less competition you will have from the low overhead dealers and contractors who can neither afford, nor know how to render these services.

"Recently, you have heard a good deal about merchandisers in our business without, perhaps, knowing too much about the subject. Well, what is a merchandiser? Broadly, a merchandiser is one who has the right product, at the right price, at the right place, at the right time. So much for product.

"But what about services? Why not merchandise services as well? By all means, merchandise your experience, your facilities, your know-how, your organization, your reputation. Certainly price alone is not the answer.

"Here is an example of what three highly successful contractor-dealers have done. They have compiled booklets listing the names of all of their installations which they keep current, and, separately, listed the names of those who have bought more than one job from them . . . repeaters . . . Think of the confidence they build with these user lists.

"On the back of these booklets, they have printed the contractors' creed which is the keynote of their success: "No piece of mechanical equipment — no matter how well engineered or constructed—is any better than the skill and experience of the contractor who installs it. Quite a sales pitch in itself.

"No one will doubt the good impression these booklets create and the confidence they establish. They use them as selling tools because no good sale is ever made unless confidence is first established.

"Adopt and apply specialty selling methods:

1. Sell yourselves.
2. Sell your stability.



**LIGHTING UP SALES** through effective use of match book advertising won a "Joshua" award for E. K. "Pete" Peterson (left) and W. F. "Bill" Hauber (right), president and vice president—general sales manager of Thermal Supply Co., Houston refrigeration and air conditioning parts wholesaler. Jim Stotts, match industry representative, presented the award. Thermal Supply's match cover gives night phone numbers of 13 sales officials in Houston, Galveston, Texas City, Beaumont and Monroe, La., and lists 58 brands of products the company wholesales.

# "WE'VE FOUND THE KEY TO TOP COMPRESSOR PERFORMANCE" — reports Utah Ice & Storage Company

"IN ALL the years we've used *Texaco Capella Oil* for our refrigeration compressors," the report says, "performance has been consistently dependable. Systems stay clean, valves and other vital parts function smoothly. The over-all results — efficient refrigeration, low maintenance expense."

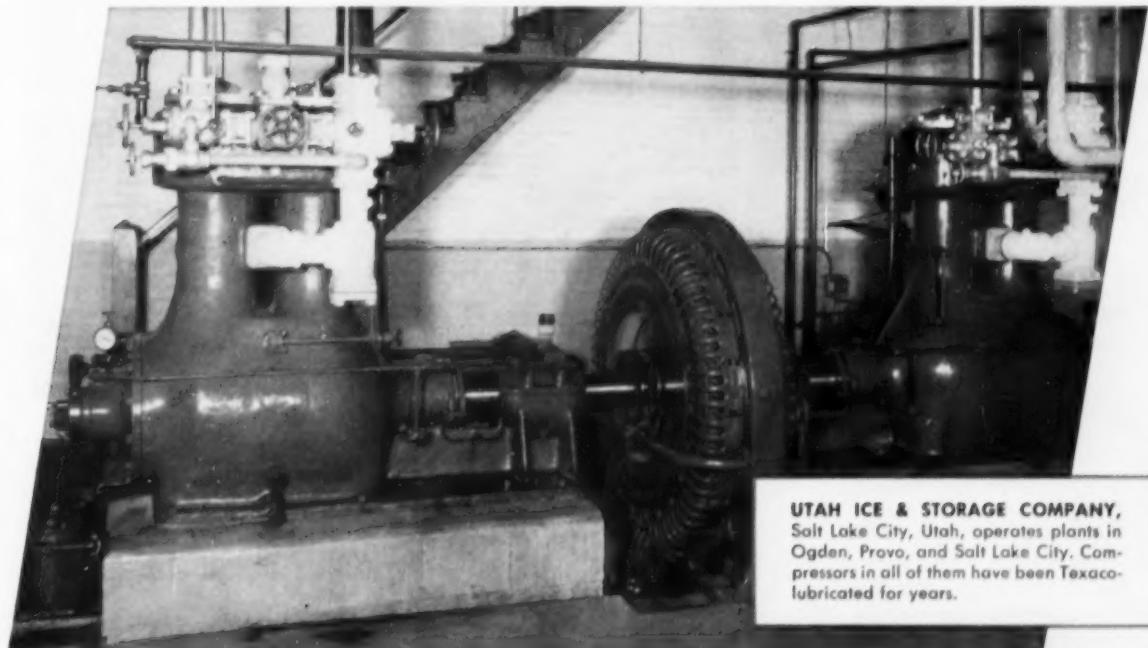
You, too, can enjoy these same benefits. *Texaco Capella Oil (Waxfree)*, for example, will not wax out in systems even down to minus 100 degrees F. It exceeds the requirements of the Freon floc test as well as the specifications of all leading refrigeration manufacturers. *Texaco Capella Oil (Waxfree)* retains its stability under the most severe conditions and effectively resists oxidation. It does not foam,

is free from moisture and is compatible with all lubricants.

There is a complete line of *Texaco Capella Oils (Waxfree)* to meet every compressor requirement. Available in 55-gallon and 5-gallon drums, 1-gallon cans, and the more widely used grades in 1-quart containers — all refinery-sealed to protect purity and quality.

For expert advice on any compressor lubricating problem, consult a *Texaco Lubrication Engineer*. Just call the nearest of the more than 2,000 *Texaco Distributing Plants* in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, New York.



UTAH ICE & STORAGE COMPANY,  
Salt Lake City, Utah, operates plants in  
Ogden, Provo, and Salt Lake City. Com-  
pressors in all of them have been *Texaco*-  
lubricated for years.



## **TEXACO Capella Oils (Waxfree)**

FOR ALL REFRIGERATING AND AIR CONDITIONING COMPRESSORS

TUNE IN: *TEXACO STAR THEATER* starring **JIMMY DURANTE** on TV Sat. nights. *METROPOLITAN OPERA* radio broadcasts Sat. afternoons.

Circle No. 38 on Reader Service Card

& AIR CONDITIONING • FEBRUARY, 1956

"3. Sell your superior organization.  
 "4. Sell your superior services.  
 "5. Sell your superior facilities.  
 "6. Sell your superior know-how.  
 "7. Sell your superior resources.  
 "8. Guard your reputation.  
 "If you do these things effectively, with ingenuity and resourcefulness, your place in this great expanding industry of ours will be assured."

#### KELVINATOR REPORTS JOBBER SALES UP 134%

Sales of Kelvinator commercial compressors and condensing units through independent wholesalers jumped 134 percent during the past two years, H. C. Patterson, commercial sales manager, announced to a meeting of key sales personnel at the Refrigeration and Air Conditioning Exposition in Atlantic City.

"Availability of Kelvinator products in all parts of the country through this program has been the prime factor in the sales gain. Experience and merchandising abilities of the independent wholesaler has meant profits for everyone with wider and more effective distribution of Kelvinator commercial units," Patterson said.

R. G. Alexander, commercial wholesaler manager, presided over the meeting. Others participating in the program were: I. E. Weber, Cincinnati; A. J. Dombles, New York; W. A. Reinhardt, Pittsburgh; R. L. Anderson, St. Louis; N. J. Collins, P. R. Heitmeyer and R. S. Geran, Kelvinator service manager, all of Detroit; T. W. Giller, Ebsco Mfg. Co., Columbus.

#### DIRECTORS APPROVE TYPHOON-HUPP MERGER

The merger agreement between Typhoon Air Conditioning Co. and Hupp Corp. has been approved by the directors of each company. Typhoon will operate as a division of Hupp Corp. and will continue all franchise agreements Typhoon now has in effect.

Don Petrone, president of Typhoon, will continue in that capacity, and Mark E. Mooney will continue as vice president in charge of sales.

#### CHICAGO CONTRACTOR EXPANDS DISPLAY FACILITIES



**ATTRACTIVE NEW SHOWROOM** was recently opened by Accurate Heating & Cooling Corp., Chicago air conditioning and refrigeration contractor-distributor, at its headquarters, 8020 S. Ashland Ave. The new showroom measures 60 by 35 feet, and is finished in canary yellow and pastel green. The company is distributor for American-Standard's "Sunbeam" air conditioning equipment, and also merchandises Frigidaire, Westinghouse, Victor Products and Carbonic Dispenser equipment. George T. Howe, president, is a former national president of Refrigeration & Air Conditioning Contractors Association. The company has recently opened a new office at 341 E. Ohio St., with John Bennoch in charge.



## Interested in a Profitable 1956? Here's an 8-Point Guide to Follow

**E**IGHT helpful checkpoints to help air conditioning dealers and distributors show a profit for the coming year were outlined by Andrew F. Ward, packaged products sales manager of Worthington's Air Conditioning and Refrigeration Div., at a recent meeting of the company's midwestern deal-

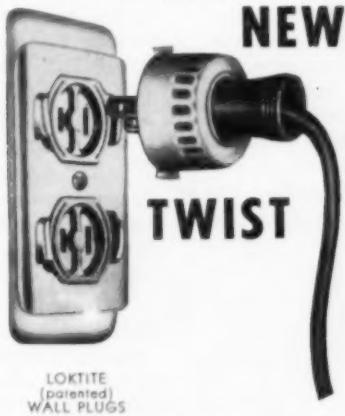
er personnel in Chicago.

Ward referred to the eight checkpoints as sound business fundamentals underlying dealer-distributor operations. He listed them as follows:

1. Do you know what it costs to open your front door every morning whether you sell anything

Circle No. 104 on Reader Service Card

ICE  
CREAM  
INSURANCE



## Keeps Ice Cream Safe!

Just a twist of the wrist fastens LokTite Wall Plugs securely in place . . . won't work out of perfect contact . . . can't be knocked loose. Small cost and easy, quick installation insure your coolers for life against accidental power interruption. Plate and plug sets fit your present outlets. One loss through failure of ordinary plug could cost many times more than a complete set of LokTite plugs for all your ice cream cabinets. Over a million LokTite plugs protect dairy products all over the country today.

Try LokTite Wall Plugs for Yourself . . .

Test LokTite performance on your cabinets: trial package of 50 Heavy-Duty LokTite Plugs and 50 Plates, only \$22.00. Less than 100 quantity . . . 25 cents each.

LOKTITE MFG. CO.

1670 Pennsylvania Street, Denver, Colorado  
Agents and Distributors: some territories open



### INDUSTRY'S LEADING PIPE THREAD COMPOUND

Get \*Plastic Lead Seal in this new handy 4-oz. applicator tube. Quick-opening cap can't unscrew . . . no leaking at seams . . . blunt tools or dropping won't harm . . . ideal size for tool and service kits.

Use PLS for water, steam, gas, chemical, refrigerant or petroleum services—pressures to 6000 psi., temperatures to 500°F. Seals permanently. Never hardens. Underwriters' approved.

Request Sample Tube. Better yet, send order for special 12-tube package. Act now.

**JOHN CRANE**  
CRANE PACKING COMPANY

6455 OAKTON ST., MORTON GROVE, ILL.  
(Chicago Suburb)

Circle No. 103 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956

Architect: Walton Becker, FAIA, and Associates  
Engineering: Rep. Air Conditioning Supply Co.  
A.C. Contractor: Western Air and Refrigeration, Inc.



**drayer-hanson**  
INCORPORATED

3301 Medford Street • Los Angeles 63, California  
(Subsidiary of National - U.S. Radiator Corporation)

Circle No. 40 on Reader Service Card

or not? What "nut" do you have to crack each month before you start making a profit?

2. Have you made up a 1956 budget yet to determine the minimum organization you require to handle the volume you expect?

3. Are you using an accurate job record system? Do you know exactly what materials have been charged out to each job, and how much labor was required against your estimate? Do you know at the end of each installation how much money you made?

4. Do you maintain a running inventory of all equipment and material? Do you physically spot check the inventory record of all equipment and material? Every single sheet of metal, a bucket of paint, a thermostat that can't be accounted for reduces the most sensitive part of your operation, your net profit.

5. Do you keep service parts and expensive small items, such as controls, under lock? The inventory of one dealer in Louisville, Ward said, shrunk \$10,000

in one year by not properly controlling the issuance of sensitive items. That was \$10,000 less net profit for the year—enough to put a son or daughter through school.

6. Do you have any new equipment that has been "cannibalized" to get repair parts? Any such equipment represents completely frozen working capital until you get it back in salable condition.

7. Have you gone through your shop lately and accumulated all your scrap metal, old units you've taken out, etc.? Scrap metal brings pretty good prices today. Why not have a fall (or spring) house cleaning and convert your scrap units into more net profit dollars?

8. Do you have any new model equipment in inventory? If you have you've got working capital tied up that reduces in value every day. The principle of merchandising used in department stores applies equally well to your business: "Sell it—mark it down—or give the stuff away—but move it." Why not go over your inventory, and make a deal to move any equipment that falls in the non-current class so that you'll get added money back in your business to use for more sales?

"These are just a few of the things," Ward said, "that can have an important effect on your net profit—the kind of important details that are necessary to running a profitable business in a real competitive market."

**ANOTHER**  
**BONNEY**  
**TOOLS**  
**FIRST!**

Every time you pick up this new BONNEY PE Wrench, you'll like the *feel* of it. Resilient plastic finger grip fits your hand. Lets you work longer, more comfortably, without tiring. Keeps your fingers from freezing when you're working in the cold. It's electrically insulated, too. Get it from your jobber . . . or drop us a line. Do it today!

**BONNEY FORGE & TOOL WORKS • ALLENTOWN, PA.**

Circle No. 42 on Reader Service Card

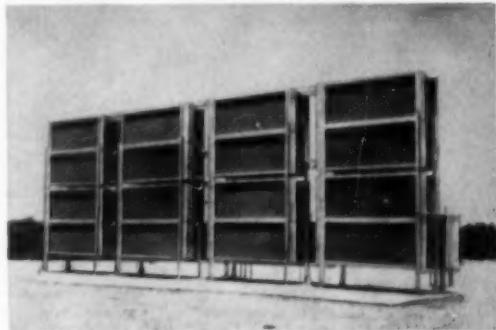
100 TON BARRIER

# *Crashing the 100 ton barrier*

with **KRAMER**

## **UNICON**

in semi-tropical climate



### UNICON SUCCESSFULLY MET THE TEST THROUGH THE SEVERE SUMMER OF 1955

You, too, can crash the big tonnage barriers with UNICON, the industry's finest remote-type air-cooled condenser. Put Kramer's 18 years of "treasured know-how" in the proper use of air as a condenser coolant to work for you.

*Photo of Kramer UNICONS mounted on roof of Handy-Andy Supermarket in San Antonio, Texas, used with 100 ton air conditioning system. Supplied through United Supply Co., of San Antonio and installed under the direction of Harold Vogt.*

Write for Bulletin U-210-L

**KRAMER**

**KRAMER TRENTON COMPANY**  
**Trenton 5, New Jersey**

## FREEZER SPACE . . .

Continued from page 52

even simpler way would be to make a count of the cases in his inventory, to get the figure you're after. This adjusted figure should be substituted for the \$3.50 used in the formula here. The important thing to remember is that it is this case-count you're after.

Knowing the inventory case count, divide it 45 to 50 cases per pallet (variance due to inventory

composition other than spread), and the result is the number of pallets that must be stored. The formula works out as follows:

\$140,000 equals 40,000 cases

\$3.50

and 40,000 equals 800 pallets.

50

But the freezer must carry more than 800 pallets, since the warehouse can work only at about 70% capacity. The freezer enclosure, therefore, must be big enough to carry ten-sevenths of 800 pallets, or 1,140 pallets.

With this figure, and the dimensions of the individual pallets that will be used the freezer can be sized on the basis of a floor layout that will accommodate all 1,140 pallets as well as allow for something over 200 fronts for expansion. "Fronts" are the warehouse aisle frontage spaces occupied by a single item. Full-size pallets would be normally used, but half-pallets could be employed for very slow turnover items. For a very fast-moving item, several fronts may be used.

Freezer space is expensive space, compared with other normal or non-refrigerated storage — so the arrangement must allow for as little waste space as possible. Especially, as much as possible of the height of the freezer must be utilized.

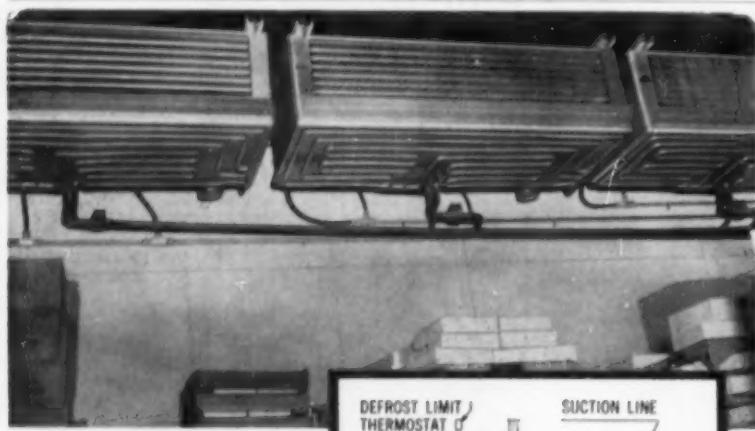
### Freezer Layout Explained

The diagram shows one layout for a freezer room accommodating the frontage and inventory outlined above. Indicated dimensions are based on the 40" x 32" wing type pallet. The plan also assumes the use of straddle-type high lift trucks, since other fork-lift trucks could not work in 7' aisles.

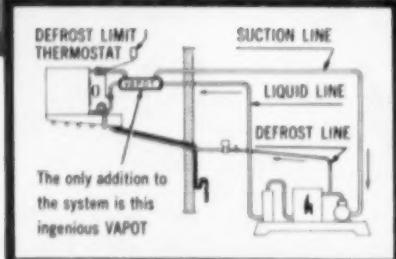
The freezer room will hold about six pieces per square foot. This checks the enclosure for size from another angle, since with generally small frozen food cases, you will average twice as many cases per square foot as compared to the generally larger grocery cases in other parts of the food warehouse.

As soon as his volume is big enough, it's good business for the frozen foods distributor or wholesale grocer to build his own freezer. Most rented spaces weren't built to fit his particular requirements; they were fitted instead, to the space available in an existing warehouse. In some, there isn't enough ceiling height. Often, also, doors are too low for lift trucks, necessitating hand-stacking.

There are other disadvantages, all of them adding up to extra costs which come out of the frozen food distributor's profits. By showing him the additional profits that having his own freezer facilities will make possible, the refrigeration contractor can build for himself an important source of new business in this field.



## NOW Defrosting Simplified



## Recold Vapomatic

VAPOR DEFROSTING METHOD

RECOLD Vapomatic uses the heat of compression in a new way to accomplish fast, foolproof defrosting. Heat is instantly available and continues undiminished until the coil is completely defrosted. Refrigeration then resumes immediately. There is no unnecessary time lag.

- Never runs out of heat
- Self contained
- Uses no external heat sources
- Requires no critical adjustments
- 100 units field tested for 18 months
- Only three line connections to install
- Defrosts automatically
- Requires no special controls to avoid slugging the pump

Write for illustrated folder —

REFRIGERATION ENGINEERING, INC. Dept. B-2

7250 East Slauson Ave., Los Angeles 22, California

Circle No. 41 on Reader Service Card



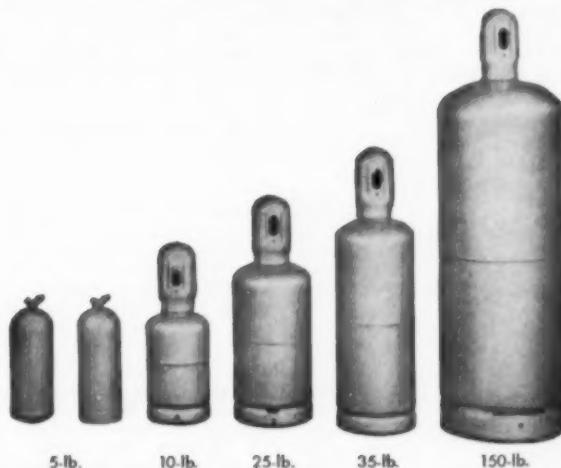
**DON'T  
SETTLE  
FOR LESS**

**use**

**Prest-O-Lite**

Trade-Mark

**CYLINDERS FOR  
REFRIGERANTS**



- ✓ Rugged, sturdy construction
- ✓ Uniform sidewall thickness
- ✓ Lightweight—easy to handle
- ✓ Finest workmanship
- ✓ Best appearance
- ✓ Tested far beyond all codes
- ✓ Extra years of trouble-free life
- ✓ They're economical!

You are *sure* that your refrigerant gas containers will give you many years of dependable service—and save you extra dollars—when you own PREST-O-LITE cold-drawn cylinders. They're built by the company which has been the largest manufacturer and *user* of compressed gas cylinders for almost half a century. In each step of design and fabrication the ultimate in gas containers is achieved—and this skill and experience is passed on to you with every PREST-O-LITE cylinder you get. It's no wonder that refrigerant cylinder buyers who have compared feature for feature have found out they are getting the greatest value with top-quality PREST-O-LITE cylinders.

Available in sizes ranging from 5-lb. to 150-lb. capacities—with valve, and cap on all but 5-lb. styles. A few of the popular squat-type cylinders are shown above. You'll like their good-looking appearance, with glossy metallic bronze finish. **WRITE TODAY** for full information and prices—select the PREST-O-LITE cylinder that fits *your* needs exactly.

"Prest-O-Lite" is a registered trade-mark of Union Carbide and Carbon Corporation.

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**Linde**

**LINDE AIR PRODUCTS COMPANY**

**A DIVISION OF UNION CARBIDE AND CARBON CORPORATION**

30 East 42nd Street **UCC** New York 17, N. Y.

Offices in Other Principal Cities

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Division of Union Carbide Canada Limited, Toronto

**Heres further proof why  
STA-KOLD·VIMCO·SNO-QUEEN  
ARE THE FASTEST SELLING REACH-IN REFRIGERATORS!**

**THE FIRST AND ONLY  
REFRIGERATORS IN THE WORLD  
EVER TO WIN THE**



FROM  
INSTITUTIONAL  
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THERE ARE MORE  
PRACTICAL AND MONEY  
SAVING FEATURES IN  
THESE REFRIGERATORS  
THAN IN ANY  
OTHER MAKE

YOU,  
YOURSELF  
CAN CHANGE  
THE INTERIOR  
IN MINUTES

WITHOUT  
TOOLS

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Patents Pending

EVERY INTERIOR IS  
ADJUSTABLE TO TAKE  
ANY OR ANY  
COMBINATION OF

- BAKERS PAN SLIDES
- STATIONARY OR PULL-OUT SHELVES
- REFRIGERATED DRAWERS
- STATIONARY OR PULL-OUT MEAT RAILS



**100% ALL-METAL COMMERCIAL REFRIGERATORS & FREEZERS**

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REPRESENTATIVE OR INFORMATION

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DIRECT FACTORY REPRESENTATIVES IN ALL PRINCIPAL CITIES • SOLD ONLY THROUGH SELECTED DEALERS

Circle No. 45 on Reader Service Card

**USEFUL**

**BULLETINS • BOOKLETS • CATALOGS**

**PROFIT POTENTIALS** in hermetic service work are described in a sheet issued by Frankell Mfg. Co. The sheet describes the company's new hermetic compressor opener, and tells how it is applicable to various shapes of hermetic units. Emphasis is placed on ease of operating the equipment, and extra profits possible through its use.

Circle No. 109 on Reader Service Card

**MOTOR CONTROLS FOR** air conditioning and refrigeration are described in Bulletin 5410 issued by Furnas Electric Co. The bulletin lists applications, standardization and protection features, gives list prices and ordering instructions. Motor controls for bulk milk coolers also are described in a separate bulletin 5405B.

Circle No. 110 on Reader Service Card

**A 12-PAGE** two-color illustrated catalog (No. 152) on the complete line of Flexon flexible metal hose has been released by Flexonics Corp. Full range of flexible metal hose products are covered along with complete coupling data. An easy four-step metal hose selection guide is included.

Circle No. 111 on Reader Service Card

**MAGNETIC STARTERS** for air conditioning and refrigeration equipment are described in a new 8-page publication (GEA-6301) issued by General Electric Co. The bulletin describes features, ratings, and dimensions, and contains wiring diagrams, catalog numbers, and installation requirements.

Circle No. 112 on Reader Service Card

**A NEW CATALOG** describing its complete line of air conditioning and refrigeration controls has just been published by General Controls Co. Many new controls, plus late improvements and changes in the GEC lines, are catalogued for the first time. Also included are locations of the company's five major plants, seven warehouses and 40 branch factory offices serving the U.S. and Canada.

Circle No. 113 on Reader Service Card

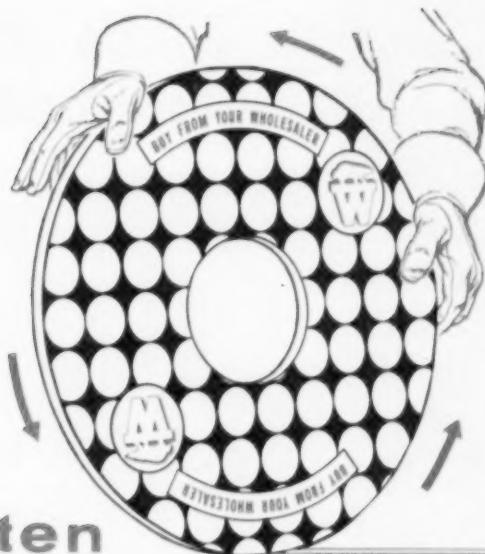
**ENGINEERS AND OTHERS** involved with the design of modern process equipment involving the use of tubing will be interested in a new six page folder (TB-357) recently released by Tubular Products Div. of Babcock & Wilcox Co. This bulletin provides information pertaining to tubular products intended for sub-zero temperature applications.

Circle No. 114 on Reader Service Card

**SHADED POLE MOTORS** are described in a four page brochure recently issued by Lamb Electric Co. The company manufactures motors in sizes of 1/35 thru 1/4 H.P., designed and built especially for air conditioning and air moving applications. Construction features are listed, plus sketches showing pertinent dimensions of units.

Circle No. 115 on Reader Service Card

*(Turn to page 68 for more Useful Literature)*



## Lighten the load... **REEL IT!**

It's as simple as ABC. Because Wolverine designed its new Roll of Tube That Rolls to fit your needs, you can lighten your load—accomplish more each day.

In the first place, because the carton is round—it can be rolled—just like a hoop. Right off the bat this feature makes handling easier—is a "reel" time saver. You'll find the thin, compact roll of tube easy to carry—just slip your arm or shoulder through the convenient center hole.

Want to know the type and size of tube the carton contains? We took care of that, too. Large easy-to-read print and approved color coding make content identification easy from any angle.

How do you open it? Just pull the gummed tape around the outer edge and there's the tube ready to use. The carton remains unharmed, protects unused tube right to the very end.

And here's a feature to "reely" lighten your load. Use the carton as a reel. Connect your tube at one end, reel the carton back. It's fast, easy—gives you a straight, kink-free line of tube.

Inside, you'll find the same top-quality Wolverine copper refrigeration tube—complete dependability through Tubemanship. It's clean, bright, consistent in temper, always easy to bend. It's dehydrated—has both ends sealed.

So, remember, to lighten your load always ask for Wolverine's Roll of Tube That Rolls. Write today for your copy of our handy booklet, "Tube Trails—with the Refrigeration Service Engineer."

WOLVERINE TUBE, 1405 Central Avenue, Detroit 9, Michigan.



**WOLVERINE TUBE**

Division of Calumet & Hecla, Inc.

MANUFACTURERS OF QUALITY CONTROLLED TUBING AND EXTRUDED ALUMINUM SHAPES

PLANTS IN DETROIT, MICH., AND DECATUR, ALA. • SALES OFFICES IN PRINCIPAL CITIES  
EXPORT DEPT., 12 E. 45TH ST., NEW YORK 17, N. Y.

Circle No. 46 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956

# KOLD-VUE...

## A NEW BEVERAGE

MERCHANDISER by **KOLD-DRAFT**  
OPENS UP A NEW MARKET  
FOR YOU.. TAVERNS.. SUPER-  
MARKETS.. "TAKE OUT" STORES

FEATURING: • Lighted interior and full vision multi-pane hermetically sealed glass door—Beverages sell themselves.

- Completely revolving shelves—Easy access to all beverages on each shelf—stock more brands.
- Takes minimum floor space—35".
- Shelves adjustable... to accommodate export bottles, pannies, stubbies, cans, 6-packs, quarts.
- Fast cooling by constantly circulating cold air.



### FREE BULLETIN AVAILABLE

Write for Literature and Prices to  
THOMAS A. MARTIN, Sales Mgr.



KOLD-VUE IS A PRODUCT  
OF THE KOLD-DRAFT DIVISION  
**UNIFLOW MANUFACTURING CO.**  
EAST LAKE ROAD, ERIE, PENNSYLVANIA

Circle No. 47 on Reader Service Card

## USEFUL LITERATURE . . .

Continued from page 66

**THE COMPLETE LINE** of Mueller Brass Co. "streamline" refrigeration and air conditioning products is described in catalog and price list R-155 recently issued by the company. Covered in the catalog are the company's lines of valves, liquid indicators, heat exchangers, driers, filters, and strainers, flare fittings, wrot copper fittings, tubing, and service tools and accessories. A page is devoted to soldering instructions.

Circle No. 116 on Reader Service Card

**32 PAGE BULLETIN** (80-B) issued by Frick Co. lists the company's complete line of equipment for air conditioning and refrigeration applications. In addition to covering complete range of equipment, and showing construction details and specifications, the bulletin also lists useful refrigeration tables for use in application of the company's equipment.

Circle No. 117 on Reader Service Card

**A NEW LINE** of remote air-cooled condensers are described in detail in bulletin AC-100, just issued by Halstead & Mitchell. Features discussed include efficient core design, 4-blade deep-pitch fans for quiet operation, and steel casings protected against corrosion. Table of performance data for various size units at different suction temperatures is presented and a second table outlines coil and fan data.

Circle No. 118 on Reader Service Card

**TWO NEW FOLDERS** telling applications, sizes, properties and fittings of Alpha PVC corrosion-resistant pipe have been released by Alpha Plastics Inc. First folder shows detailed reference information for proper selection of unplasticized rigid PVC pipe, where high chemical resistance or high impact resistance is desired. Companion folder describes and illustrates threaded and socket solvent cement fittings recommended for use with the Alpha line of rigid PVC pipe.

Circle No. 119 on Reader Service Card

**EUTECTIC BLOWER UNITS** for truck refrigeration application are described in an eight-page folder available from Dole Refrigerating Co. The folder, designated as Section CBE of the Dole Engineering Catalog, gives data on the individual models in the series, shows typical installations in a retail truck and in a wholesale truck. Roughing-in dimensions and installation and maintenance instructions also are given.

Circle No. 120 on Reader Service Card

**HEAVY-DUTY VIBRATION** hangers are described in a new catalog (VH-55) available from T. R. Finn & Co., Inc., Industrial Div. Catalog describes two types of vibration hangers: rubber-in-shear type and steel spring type. Dimensions and specifications, installation instructions and engineering services are also described. Load capacities are 35 to 1500 pounds for rubber-in-shear hanger, and 50 to 1000 pounds for steel spring hanger.

Circle No. 121 on Reader Service Card

**COMPLETE BUYER'S GUIDE** to dairy and food processing equipment manufactured by Creamery Package Mfg. Co. is contained in a new 132-page catalog just issued. Products range from ammonia accumulators to washing compounds. Some of the newer items described include the latest CP "Milkeeper" bulk milk tanks and others are included. Descriptions and specifications are organized for easy selection and ordering.

Circle No. 122 on Reader Service Card

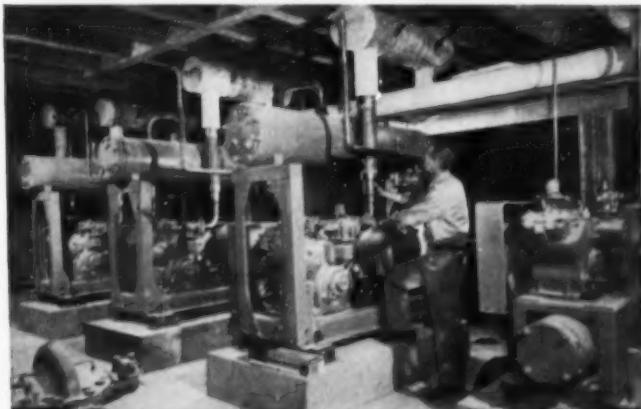
(See page 104 for Air Conditioning Literature)

# "A few dollars extra for American Vibration Eliminators could save our customers large repair bills,"



**(Above)** Workman inspects one of 20 American Vibration Eliminators installed by Lumm Corporation in Monroe Shopping Center near Monroe, Michigan.

**(Below)** One store alone has five compressors, each with two American VE's ranging in size from  $1\frac{1}{2}$ " to  $3\frac{1}{2}$ ".



Circle No. 48 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956

**says Robert Greenwald,  
The Lumm Corp., Toledo, Ohio**

"Some of our installations contain up to 1000 pounds of Freon 12 or 22. If the pipes break because of vibration, it would cost a customer a great deal to replace the refrigerant—not to mention the cost of repairing the pipes themselves.

"Even noise over a period of time can upset customers," Mr. Greenwald adds. "That's why we install American Vibration Eliminators on our critical jobs. They help to insure a satisfactory job."

## **YOU CAN USE AMERICAN VE's WITH CONFIDENCE BECAUSE**

**The right metal does the job.** The special tin-bronze alloy—the result of American Brass metallurgical know-how—is tailored for refrigeration and air conditioning.

**Double braid where extra protection is needed.** The second braid is standard on all American VE's  $2\frac{1}{8}$ " O.D. or larger.

**Clean, dry, tested, protected.** Snip the end of the vapor-proof polyethylene bag and you have a factory-fresh unit to install in the line.

**Packaged for your convenience, protection.** The new boxes are sturdy, easy to open, easy to identify. No confusion or fumbling.

56186

**NOW listed by  
Underwriters' Laboratories  
through sizes  $3\frac{1}{8}$ " O.D.**

For descriptive folder write: The American Brass Co., American Metal Hose Division, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Co., Ltd.

*WHEREVER CONNECTORS MUST MOVE*

**AMERICAN**  
For American Vibration Eliminators  
see your  
**ANACONDA®**  
DISTRIBUTOR

# NEW PRODUCTS

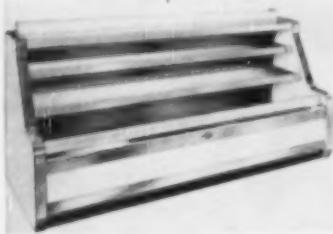
For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

(For Air Conditioning Products turn to page 108)

## Dairy Merchandisers

**Product:** New four-shelf dairy merchandiser cabinets.

**Manufacturer:** Federal Refrigerator Mfg. Co., Waukesha, Wisc.



**Features:** Units available in two sizes, 7' and 11'. Smaller unit uses 1 hp condensing unit, larger unit 1½ hp unit. Wider top shelf is said to allow greater display area, over 4 cu. ft. of refrigerated display per foot of case. Total display area in 7' model is 37 sq. ft. and 11' model is 57 sq. ft. Known as 6400 Series, cabinet is only 54½" high. Three refrigerated shelves are 29½", 18", and 12" wide. Top shelf for related item displays is full 10" with backboard and front molding to prevent merchandise from falling.

Circle No. 167 on Reader Service Card

## Ice Flaking Machines

**Product:** "Chip-Freeze" automatic ice flaking machines.

**Manufacturer:** Cold Corp. of America, Chicago, Ill.



**Features:** Units are available in decorator colors of shocking pink,

baby blue, orchid, canary yellow, mint green, and white, to blend with the decor of commercial and industrial establishments. All ice chips are delivered at waist level. New unit delivers 560 lbs. of ice daily and is said to produce flakes for as little as 2¢ per bushel or 6¢ per 100 lbs. The entire mechanism is easily accessible from front and rear. Machine turns itself on and off, and fills itself automatically as ice is used. Uses hermetically sealed refrigerating system. Storage capacity is approximately 200 lbs. and dimensions are 61½" high, 30" wide, and 24" deep. Cabinet is of 18 gauge bonded steel finished in hi-baked refrigerator enamel.

Circle No. 168 on Reader Service Card

## Maximum Pressure Gauge

**Product:** New maximum pressure gauge.

**Manufacturer:** Jas. P. Marsh Corp., Skokie, Ill.



**Features:** Gauge is designed to relieve serviceman of constant gauge watching and to give visual proof of maximum pressure reached over any given period of time. By means of check valve, pressure applied is trapped inside Bourdon tube and indicating hand is stopped on dial at point of maximum pressure. Pointer may be returned to zero by pressing push button on side of gauge socket. Gauge is standard with polished brass case and ring, glass crystal, 2½" dial, ½" male bottom connection and "Recalibrator".

Circle No. 169 on Reader Service Card

## Spot Merchandiser

**Product:** Roll-A-Bout refrigerated spot merchandising specialty case.

**Manufacturer:** C. Q. Sherman Associates, Inc. Mt. Vernon, N. Y.



**Features:** Case is designed for spot merchandising of perishables in island displays and at check-out counters. Unit measures 36" x 30" x 40" high with capacity of up to 160 quarts, or 7 cu. ft. Rolls on invisible rubber tread casters. Cooling provided by ½ hp self-contained condensing unit. Case requires no defrosting. Absence of dividers and air deflector shields allows more inside space for display. Two sides of case are sealed double-pane glass. Circle No. 170 on Reader Service Card

## Combination Wall Case

**Product:** Model CBM-9 combination meat, dairy and beverage wall case.

**Manufacturer:** Peerless Equipment Corp., Mount Vernon, N. Y.



**Features:** Combination unit measures 9' long, 79" high, and 30" deep. Provides large storage capacity and 100% visibility. Both interior and exterior have all-porcelain finish. All-purpose case has sliding glass doors, adjustable shelving, and provides a separate storage section for hanging meats. Coils or blower available as optional equipment.

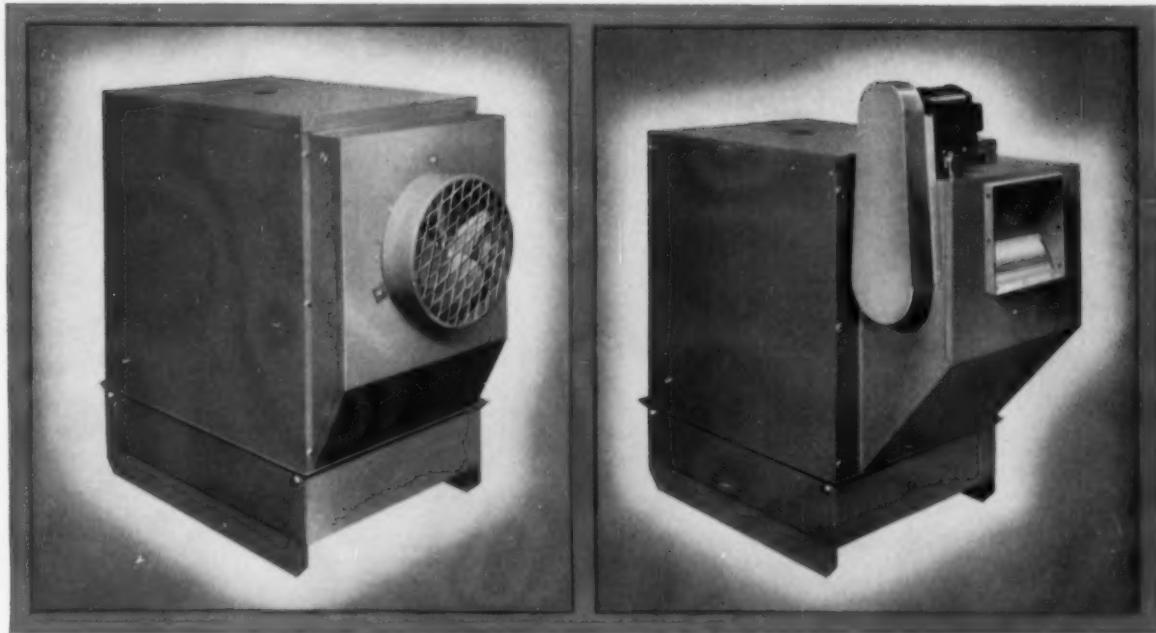
Circle No. 171 on Reader Service Card

## Open-Type Compressors

**Product:** New "Anniversary Model" line of open-type refrigeration compressors.

**Manufacturer:** Brunner Mfg. Co., Utica, N. Y.

# SMASHING SUCCESS STORY



## LARKIN WATER-SAVER COOLING TOWER IS GOING GREAT GUNS ALL OVER NATION

Not since Larkin introduced its now famous Frost-o-Trol® hot gas defrost system has a smash hit like this come along!

The Larkin Water-Saver is THE answer to the growing demand for a high-quality, low-priced cooling tower.

Wholesalers and dealers took to this new line like ducks to water, when it was introduced about a year ago—following more than two years of research and engineering. From coast to coast, the orders poured in—and they keep on coming in, new orders and repeat orders. THIS is the real answer to whether a product's really got it!

### Propeller or Centrifugal Models

A feature with wide appeal is that the Water-Saver is available with propeller fan or centrifugal blower. There is a variety of models in each type.

Dealers and wholesalers praise the capacity ratings, the compactness, and the prices that permit competitive selling.

All of these outstanding features are building sales:

Wetted surfaces are of all-heart redwood, with nail-less, interlocked construction • More wetted surface than other towers of comparable tonnage • Bolted construction—unit is easily dismantled in the field—all the way down to the sump • Panels are 16-gauge steel; sump is 12-gauge • Entire unit finished with two coats of baked on corrosion-resistant synthetic enamel • Mastic coated inside • Intake screen available as optional equipment • Motors—two- and three-ton models with fan have direct drive, totally enclosed motors. All other models are belt driven, with drip-proof motors • Propeller fan and blower assembly easily interchangeable in the field • Centrifugal blowers have bronze sleeve bearings; belt-driven propeller fans have neoprene-sealed ball bearings • Stainless steel shafts on belt-driven propeller model • Blowers, propeller fans and scrolls are hot-dip galvanized and dynamically balanced after fabrication • All-bronze float and float valve • Gravity-type distribution basin—low pumping head over tower • Distribution basin cover supplied as standard equipment • Water outlet in sump has large strainer and anti-cavitation plate, easily removed for cleaning.

*Dealers:* get in touch with your wholesaler now about this great new Larkin line. *Wholesalers:* get in touch with your Larkin representative, or write us direct, for full information.



Circle No. 49 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956

**Features:** Known as "NR" series, compressors are for use with refrigeration condensing units in 10 thru 40 hp range. Three units in line are completely new — NR-10, NR-20 and NR-30. Other units, previously introduced are NR-50 and NR-100. Speed range of units is from 550 to 1070 rpm. All units have pressure lubrication, new lightweight running gear and standardized valve plate assemblies. Internal manifolding is another feature offered. With new valve service available on all "NR" models, wholesalers can now standardize on about one-third the number of spare parts for valve plates.

Circle No. 172 on Reader Service Card

### Low Temp Unit Cooler

**Product:** Low temperature electric defrost unit coolers.

**Manufacturer:** Refrigeration Appliances Inc., Chicago, Ill.

**Features:** Six models of unit are designed for use with Freon, ammonia and brine. Basic rated cooling capacities with Freon and ammonia range from 1000 to 4760 Btuh at 1° T.D. Capacities with brine can be obtained from factory. Units move 1868 to 7100 cfm or air. Operation of defrost feature is automatic. Defrosting is accomplished by electric heaters. Defrost cycle is commenced by time clock; limit

thermostat inside unit prevents overheating after defrosting is completed. Manual control may be obtained by single-pole double-throw switch



replacing timer. Front side air intake and discharge permits space under and on side of unit to be used for storage.

Circle No. 173 on Reader Service Card

# Brand new idea ...in testing gauges

**It's the new "Serviceman" maximum pressure gauge . . .**

Another example of Marsh coming up with an ingenious idea to make refrigeration servicing easier and better!

This time it's a new type of maximum pressure gauge — a gauge that shows top pressure with extreme accuracy, whether you make a short test or leave it over night.

The secret is a check valve that traps the pressure in the bourdon tube until you release it with that handy push button. Then the pointer jumps back to zero. It's so convenient and useful you'll wonder how you ever got along without it!

This Marsh innovation is incorporated in the highly accurate deluxe "Serviceman" testing gauge with 400 lb. scale . . . dressed up in a handsome, polished brass case with a knurled screwed ring which gives quick access to the Marsh "Recalibrator" to keep it always accurate.

Write for facts or see your wholesaler  
**MARSH INSTRUMENT CO.**

Sales affiliate of Jas. P. Marsh Corp.

Dept. P, Skokie, Ill.

Marsh Instrument & Valve Co. (Can.) Ltd.  
8407 103rd St., Edmonton, Alberta, Can.

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

Circle No. 50 on Reader Service Card

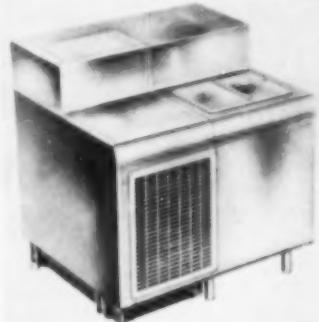


### Flaked Ice Maker

**Product:** Electric automatic flake ice maker.

**Manufacturer:** Bastian-Blessing Co., Chicago, Ill.

**Features:** Unit provides flaked ice as needed for fountain-food serv-



ice. Ice flakes are conveyed to connecting insulated bin holding approximately 170 lbs. and unit shuts off when bin is full, turns itself on to replace flakes as they are used. Capacity varies with temperature, but with water at 70° F machine will produce approximately 250 lbs. of flaked ice per day. Unit is 3' high with stainless steel facings and work top, suitable for installation in fountain line-up.

Circle No. 174 on Reader Service Card

### Portable Descaling Pump

**Product:** Model 77 portable diaphragm descaling acid pump for refrigeration and air conditioning service.

**Manufacturer:** Ace Pump Corp., Memphis, Tenn.

**Features:** Model 77 is said to be effective for handling acids and abrasives because diaphragm completely separates pumping and lubricating chambers. Diaphragm pumps do not rely on close tolerances, packing glands or rotary seals



**NOW**  
**profit** comes in **colors**

DUSTY PINK FRENCH GRAY FIRNMIST COLONY BLUE SANDALWOOD POTTERY BLUE

as shown in illustration

a completely **NEW**  
 sales appeal in

**Curtis**  
**AIR CONDITIONING**  
**UNITS**

*It's a Curtis exclusive!*

For the first time Curtis packaged air conditioning units in a rainbow of cool restful colors baked on at the factory.

Dealers everywhere will welcome this sales plus because:

1. The modern trend is to colors in appliances of all kinds. Now you have it in Curtis packaged air-conditioning.
2. Combinations of colors are available to complement any decorative pattern your customer may desire!
3. A whole new field is opened to you with these new colorful Curtis units that cool and add beauty to any interior.

and ONLY Curtis has it!

AVAILABLE IN SIZES FROM  
 3 THRU 20 TONS

Remember,  
 you can  
 count  
 on

**Curtis**

MANUFACTURING COMPANY  
 Refrigeration Division

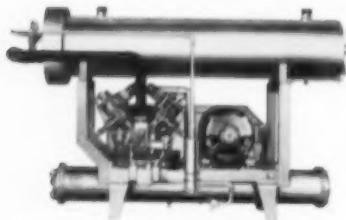
1915 KIENLEN AVE. • ST. LOUIS 20, MO.

# Curtis covers the field . . .

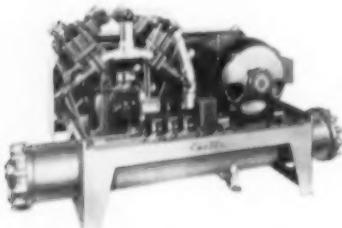
means more profits for you!



Packaged Air Cooled Air Conditioning Units — 2 through 7½ tons. Residential and Commercial applications.



Packaged Liquid Chillers — 7½ to 100 tons—F-12 or F-22. With room console units to provide controlled cooling and heating without duct work.



Condensing Units up to 100 tons—F-12 or F-22.

Remember  
You can  
COUNT on

# Curtis



INDUSTRIAL  
AIR COMPRESSORS



AUTO LIFTS



AIR CYLINDERS



CAR WASHERS



AUTOMOTIVE  
AIR COMPRESSORS

MANUFACTURING COMPANY  
Refrigeration Division  
1915 KIENLEN AVE., ST. LOUIS 20, MO.



CM-4

for pumping efficiency. There is no loss of capacity due to gradual wear, leakage, or friction between moving parts. All materials are acid resistant. Diaphragm and valve discs are Neoprene. Valve stems and springs are of stainless steel. Pumping chamber is nickel iron. Pump has pulsating discharge which agitates acid in coils and hastens scaling action. Unit consists of Model 77 pump and  $\frac{1}{3}$  hp electric motor mounted on base. Unit measures 18" long by 12" wide, weighs approximately 75 lbs.

Circle No. 175 on Reader Service Card

### 3-in-1 Tool

**Product:** New 3-in-1 saw tool.  
**Manufacturer:** Aladdin Mfg. Company, Kansas City, Mo.

**Features:** Tool fits into any  $\frac{1}{4}$ "



electric drill and converts it into a hack saw, jig saw, or coping saw. Can be used for cutting metal, wood, plastic, cardboard, or plasterboard. Tool is sturdily built and machined, with set screw to lock blade for safety. Up to  $9/16$ " is provided for chip clearance, and specially designed cam reduces speed to  $\frac{1}{2}$  of drill speed. Movable handle serves also to protect saw blade.

Circle No. 176 on Reader Service Card

### Bakery Display Freezer

**Product:** Model DF 72SC TB automatic hot gas defrost bakery display freezer.

**Manufacturer:** Frigid Igloo Mfg. Corp., Yonkers, N. Y.



**Features:** Freezer operates at  $-5$  F and can be used for display and sale of ice cream and whipped cream cakes or other frozen novelties. Unit is available in self-contained and remote models in white, color

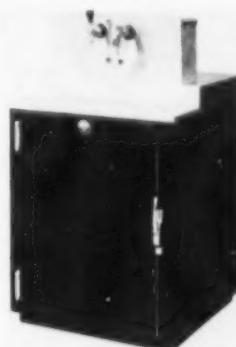
or wood-grain finishes. All cases 50" high, 33" deep. Units are regularly equipped with Thermobank hot gas defrost system, but can be supplied, if desired, with plates instead of hot gas unit.

Circle No. 177 on Reader Service Card

### Draft Beer Cooler

**Product:** One keg direct-draw draft beer cooler.

**Manufacturer:** Neilson Equipment Co., Alhambra, Calif.



**Features:** Unit designed for applications where space is at a premium and it is desired to serve only one brand of draft beer. New dispenser is 28" wide, 27" deep, and

Circle No. 53 on Reader Service Card

## LIQUID EYE<sup>®</sup>

INDICATORS  
(PAT. NO. 2725844)



"Great time savers  
for me and top  
insurance for my  
customers!"

FOR LARGER COMMERCIAL INSTALLATIONS  
in Low to High temperature applications



O.D.S. 2,000 Series Liquid Eye 3/4" and  
7/8" sizes (one-piece copper constructed)

### Here's why almost 1,000,000 Liquid Eye indicators

#### have been sold to date

Spring loaded gaskets for positive sealing  
 • unrestricted full-line flow • pyrex glass,  
 double sealed at sides and ends, provides  
 instant check of refrigerant condition •  
 guaranteed to 500 psi. • precision made.

Sold by leading wholesalers everywhere.  
 Send today for Catalog D-55 containing  
 the complete LIQUID EYE line.



**Allin** MANUFACTURING  
COMPANY  
1153 West Grand Ave., Chicago 22, Ill.

## ROTARY SEAL

### Replacement Units

The original replacement units—performance-proved in many thousands of installations during almost a quarter century. Available in a wide range of sizes for Commercial, Semi-Commercial, Air Conditioning and Household Refrigerator Compressors of well-known makes.

AT  
ALL  
LEADING  
JOBBERS



EASY TO  
INSTALL  
EFFICIENT  
IN OPERATION  
ECONOMICAL

2020 NORTH LARRABEE STREET  
CHICAGO 14, ILLINOIS, U.S.A.  
CANADIAN AGENT: 2025 ADDINGTON AVENUE, MONTREAL 28, QUEBEC, CANADA

Circle No. 52 on Reader Service Card



Circle No. 51 on Reader Service Card

38" high. Unit is equipped with one draft arm. Water station comes as optional equipment, second draft arm may also be installed for locations serving imported beer. Top of unit, including frost tower, is of stainless steel. Refrigerated plate located in tower makes refrigerated metal to metal contact with faucets, assuring constant tap temperature. Refrigerated plate operates independently of cabinet coil. Available less condensing unit or self-contained with 1/5 hp hermetic compressor.

Circle No. 178 on Reader Service Card

**number 1** in a series of ads to help you better understand the servicing of Tecumseh hermetic compressors.

**HERMAN HERMETIC says**

**"IDENTIFY ME PROPERLY**

*I may look like other compressors but don't guess, check my nameplate and be sure!"*

**SERIAL NUMBER**

**55 432772 TP 1337B1-3**

**B8 V 115 HPI/3 S 3414**

**CY 50/60 AMP 5.5 LRA 23.0**

Nameplate data is important. It's the only way you can properly identify Tecumseh compressors. Note the model number S 3414, and the horsepower 1/3 HP. The serial number identifies your compressor. In the upper left hand corner, the year of manufacture. Below this is the month, coded A-M for Jan.-Dec., (I is not used) and the day. The compressor shown is a Model S 3414, 1/3 HP, 115 V, 50/60 Cycle, built February 8, 1955, according to the nameplate. The bill of material number completely describes this compressor to us. It is necessary among other things, to determine the proper electrical components. With this information your wholesaler can supply you with exact replacement parts or the proper replacement compressor. Note them and be sure!



**TECUMSEH PRODUCTS**  
TECUMSEH, MICH.  
MARION, OHIO  
EXPORT DEPT.

P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Mich.

Circle No. 54 on Reader Service Card

#### Coolant Chiller

**Product:** "Lundholm" liquid chiller line that includes both horizontal and vertical cabinet units.

**National Sales Agency:** Industrial Filtration Co., Lebanon, Ind.

**Features:** Model X horizontal unit is made in sizes from 2 through 7 1/2 hp, and measures 46" long, 26" wide, and 30" high. These units are designed for stacked multiple installations to save floor space and provide uninterrupted operation. Model H-T vertical chiller has a 7 1/2 hp semi-hermetic unit, is 26" square, 50" high, and will handle 30 G.P.M. with a 6 degree temperature differ-

ence. All models have welded steel frames and heavy sheet metal cabinets. High and low pressure controls



are wired in series with the thermostat control. Units are completely assembled, and finished in hammer gray baked enamel or machine gray. Circle No. 179 on Reader Service Card

#### Ice Cream Case

**Product:** Models 66 and 666 ice cream merchandisers.

**Manufacturer:** Koch Refrigerators, Kansas City, Kan.

**Features:** Units are self-contained, have fully automatic defrosting with constant refrigeration between



defrost periods to protect ice cream texture and flavor. Each cabinet is compact 6' unit of endless design. The 24" wide display compartment provides 700 pint capacity, 12 linear ft. of open display space in 6' case. Unit can be used either as island or wall display, and canopy is available for latter application. Variety of color bands are available in stainless steel or plastic to increase attention-getting value of case.

Circle No. 180 on Reader Service Card

#### Solenoid Valves

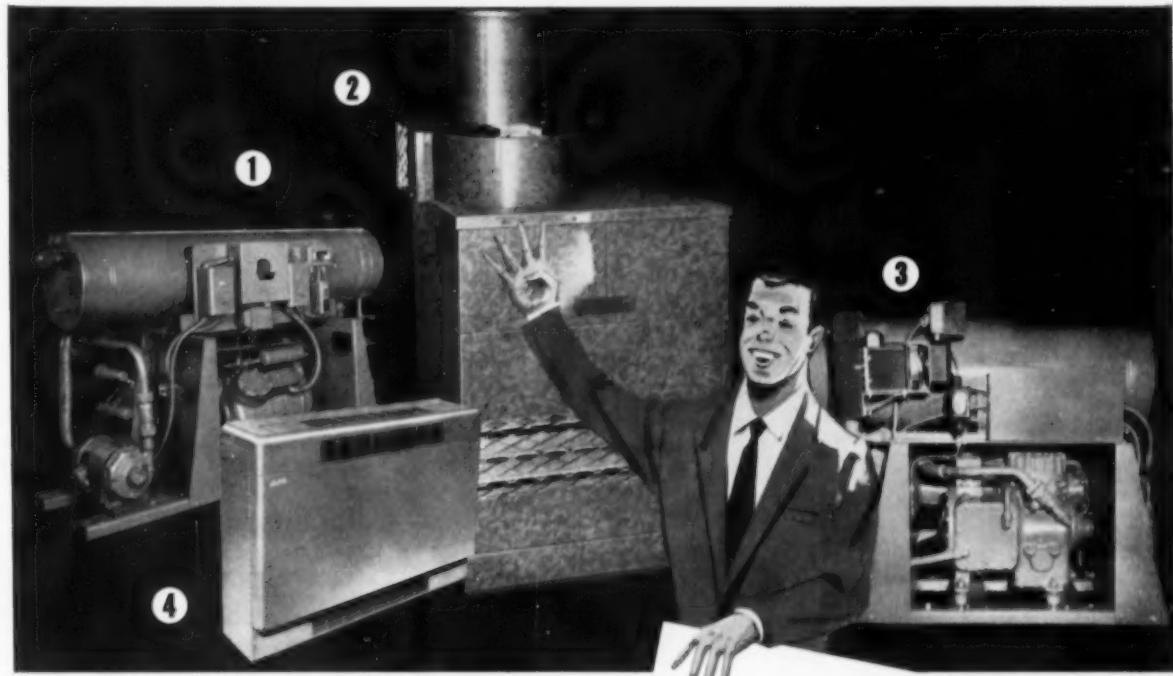
**Product:** New line of solenoid valves.

**Manufacturer:** Sporlan Valve Co., St. Louis, Mo.

**Features:** New line features "Blue Seal Coil". This coil is now used on all models of company's solenoid valves. Some models have been modified to provide for increased capacity and universal application for either F-12 or F-22. All pilot pistons operated types have synthetic instead of metal in order to assure tighter closing. One mounting bracket may

4  
4

## GOOD REASONS for you to SPECIFY *Acme* for your wet heating-cooling systems



1 **Acme FLOW-COLD LIQUID CHILLER** — today's leading packaged chiller in the 3 to 20-ton capacity range. New compactness, new quiet V-type compressors — better and more versatile than ever.

2 **Acme FLOW-COLD COOLING TOWER** — the all-metal water-saver with powerful, quiet-running blowers that are built for more customer satisfaction and less upkeep than any other tower on the market. 6 sizes.

3 **Acme FLOW-TEMP HEAT PUMP** — the unit that's been successful as a source of economical, year 'round comfort — heating and cooling — in a wide range of climates.

4 **Acme FLOW-TEMP ROOM CONDITIONERS** — one of a complete new line of remote room conditioners that offers a style for every installation — floor or ceiling mounted, cabinet-type or concealed.

5 **PROVEN PERFORMANCE** — every unit in the Flow-Cold, Flow-Temp line has been field tested and proven. Your jobs go smoothly when you specify Acme.

6 **EASY, ECONOMICAL INSTALLATION** — Acme engineering has the contractor in mind. Wiring and piping is designed for quick, labor-saving connections to increase your profits.

7 **A COMPLETE LINE** — Acme offers you all the major components of a wet heating-cooling system in a wide range of sizes and models. You tailor the job to the customer's needs.

8 **100% Acme BACKING** — Over 36 years of experience in the field and one of the industry's most progressive sales policies stands behind every Acme product you buy.

5 **PROVEN PERFORMANCE**  
6 **EASY, ECONOMICAL INSTALLATION**  
7 **A COMPLETE LINE**  
8 **100% *Acme* BACKING**



**ACME INDUSTRIES, INC.** JACKSON, MICHIGAN

Send me complete details on *Acme* Flow-Cold, Flow-Temp line.

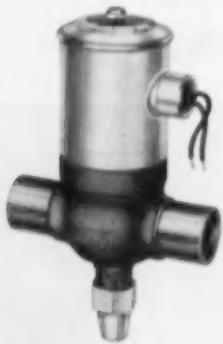
Name \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

be used for Types 12, 43, 53, 62, 73, and 172. Also, one coil (Type 90) may be interchanged between Types



33, 43, 53, and 83. Two-piece name plates allow for easy interchange of coils with different voltages without ordering new name plates or altering old plates.

Circle No. 181 on Reader Service Card

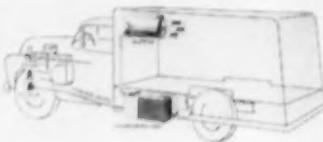
#### Truck System

**Product:** Kold-Trux "Mark 100B" continuous truck refrigeration system.

**Manufacturer:** Tranter Mfg., Inc., Lansing, Mich.

**Features:** Complete unit weighs only 410 lbs., and is said to have

unique simplicity of operation, fast pull down and automatic frost prevention. Complete with power source, condensing assembly and blower evaporator. System is driven by mechanical power train in which power is derived from engine crank-shaft pulley through electric clutch. It is then transferred to condensing unit through flexible shaft. Stand-by



power is provided by electric motor that drives condensing unit without operating truck engine. Systems are available with 1, 1½, 2 and 3 hp capacity stand-by motors. Condenser utilizes entire coil surface for dissipation of heat. Fan is located on cool air side of coil. "Turbo-Jet" blower provides greater movement of air through coil and superior circulation of air through truck body.

Circle No. 182 on Reader Service Card

#### Storage Cooler

**Product:** Improved line of "Kool-Kloset" combination refrigerators.

**Manufacturer:** La Crosse Cooler Co., La Crosse, Wis.

**Features:** Two new coil arrangements have been designed for use in standard models. One coil has a



high humidity factor for refrigeration of eggs, produce, meats, and berries. The other is intended for heavy duty use in cases where product stored in refrigerator will actually be cooled down. Complete refrigerator units are made of specially treated metals, and have inside release hardware.

Circle No. 183 on Reader Service Card

#### Work Saving Shelves

**Product:** Line of work saving shelves for new and existing reach-in refrigerators.

## Gloekler MEANS BUSINESS

- ★ **EXPERIENCE:** Gloekler has been designing and manufacturing commercial refrigerators for more than 50 years.
- ★ **QUALITY:** Only materials and workmanship that assure maximum performance are used in our products.
- ★ **DESIGN:** Both standard and custom designs are available — offer every important advantage to users.
- ★ **PERFORMANCE:** We provide written assurance of faithful performance and economical maintenance of each unit.
- ★ **PRICING:** Experience and modern production methods allow highest quality standards at competitive prices.
- ★ **PROFIT:** Dealers are assured of full markups and additional potential profit from customers through sale of add-on features.

**WALK-IN & REACH-IN REFRIGERATORS  
STANDARD AND CUSTOM DESIGNS  
FOR EVERY COMMERCIAL and INSTITUTIONAL USE**

## GLOEKLER REFRIGERATOR CO. ERIE, PENNSYLVANIA

Circle No. 56 on Reader Service Card

FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

**Manufacturer:** McCall Refrigerator Corp., Hudson, N. Y.

**Features:** Line includes roll-out and pull-out shelves, roll-out meat



rails, tray slides, and revolving shelves. Milk can roll-out shelves are ball bearing equipped and designed for 10 gal. milk cans or other heavy items such as stacked crates of pint milk bottles. Roller pull-out shelves, also with ball bearings, allow more storage on shelf, are easily removed, and adjustable for various heights of contents. Tray slides available for 18x26" or two 14x18" trays, spaced as desired on standard 2" centers. Revolving shelves are designed for storage of small items at upper levels where pull-out shelves are too high for convenience.

Circle No. 184 on Reader Service Card

#### Chill Room Cooler

**Product:** "Between the rails" space cooler for chill room use.

**Manufacturer:** Industrial Mfg. & Engineering Co., Chicago, Ill.

**Features:** Unit is designed to fit



between meat rails and occupy otherwise unused space at ceiling. Unit has 16" diameter double width, double inlet blower wheel and delivers 3500 cfm of refrigerated air with 1 hp motor. Capacity is 48,000 Btuh at 15 F T.D. Insulated double drip pan. Removable side panels permit access to interior of unit for cleaning or inspection. Unit provided with connection for hot gas defrosting.

Circle No. 185 on Reader Service Card

#### Ozone Generator

**Product:** "Eagle" forced air ozonator for high humidity meat lockers and food coolers.

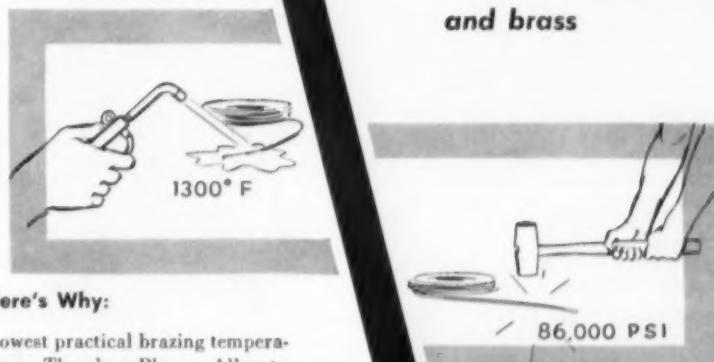
**Manufacturer:** Melco Sales, Inc., Minneapolis, Minn.

*Right down the line*

## UNITED'S PHOSON alloys

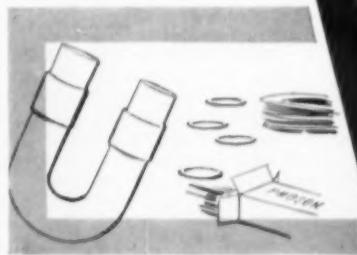
*Right every time*

for brazing copper  
and brass



#### Here's Why:

Lowest practical brazing temperatures. There's a Phoson Alloy to meet your every requirement.



**High Capillary Attraction and Versatility.** Provides outstanding free flow and deep penetration. Ideal for preplacement or face-fit application. Efficient in both tightly-fitted or more loosely-fitted joints. Phoson Alloys are available in straight lengths, coils or pre-formed rings. Contact your United Welding Supply Distributor or write

Super-Strength—Corrosion Resistant. Joints are stronger than metals brazed. Original tensile from 86,000 p.s.i. Highly resistant to most types of corrosion and generally equal to copper itself.

Join better by brazing  
Join best with PHOSON  
or SIL-BOND.

Choose Sil-Flux for  
every fluxing need.



## UNITED WIRE

AND SUPPLY CORP.

Brazing Alloy Division

PROVIDENCE 7, R. I. • OFFICES IN PRINCIPAL CITIES

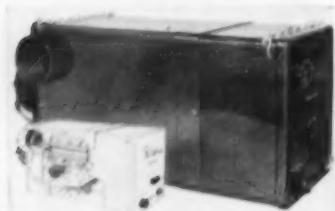


BUFFALO, N. Y. • MAY 9-11, 1956

LOOK TO UNITED FOR THE BEST IN ALUMINUM, COPPER AND BRASS TUBE AND WIRE.

Circle No. 57 on Reader Service Card

**Features:** Unit produces concentrations of ozone, for air deodorization and preservation of meats, efficiently and at low operating cost. Features include forced air circula-



tion with special filtering and heating element that draws air through a glass fiber filter and passes it over a heating plate to reduce moisture content of the air. The unit's heavy-duty squirrel cage type fan blows 3,000 cu. ft. of ozonized air per hour assuring even diffusion of the gas throughout enclosure. New design provides twice the output of the company's earlier models.

Circle No. 186 on Reader Service Card

#### Impeller Pumps

**Product:** New series of Neoprene rubber Impeller Pumps.

**Manufacturer:** American Machine Products, Inc., New York City.

**Features:** Pumps range from  $\frac{3}{8}$ " to  $1\frac{1}{8}$ " ips with flow ranges to 55 gpm. Units are designed for use



where a low pressure, low cost pump is required to transfer any liquid that does not affect bronze or Neoprene, with pressure range to 30 psi, depending upon model. Pumps operate in either direction at low or high speeds. Impeller is replaceable at low cost and keyed to shaft for easy application. Pump itself is made entirely of bearing bronze, while shaft is stainless steel. Speeds range from 100 rpm to a maximum of 1750.

Circle No. 187 on Reader Service Card

#### Swedging Tool Kit

**Product:** Swedging tool kit featuring interchangeable tips.

**Manufacturer:** Madden Brass Products Co., Aurora, Ill.

**Features:** In addition to lightening the serviceman's tool box load, interchangeable tips for swedging tool offer easy method for joining tubes of same size by enlarging diameter of one to permit insertion of another tube for soldering. Kit consists of light plastic handle, and 4 interchangeable tips for  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ " and  $\frac{5}{8}$ " O.D. tubes. Product more completely described in Catalog L55-1020 available from manufacturer.

Circle No. 188 on Reader Service Card

gle phase. Capacity is 10 gpm against a 10' head, and unit is suitable for use up to 20 psi pressure.



Overall assembly measures  $6\frac{1}{2}$ " x  $11\frac{1}{2}$ " x 10" high, and weighs approximately 25 lbs.

Circle No. 190 on Reader Service Card

#### Hermetic Compressors

**Product:** Expanded line of welded hermetic motor-compressors.

**Manufacturer:** Copeland Refrigeration Corp., Sidney, Ohio.

**Features:** Models in F-12 line range from  $\frac{1}{2}$  hp to 1 hp with 115



volt or 230 volt current characteristics available on  $\frac{1}{2}$  hp and  $\frac{3}{4}$  hp models. Units using F-22 range from  $\frac{1}{2}$  hp to  $1\frac{1}{2}$  hp, with current characteristics similar to F-12 models. Uniform base mounting centers and height variations of only  $1\frac{3}{16}$ " from smallest to largest model permit near-uniform installations in virtually all sizes of room air conditioners, company says. Company also has introduced a new 10 hp suction-cooled "Copelameric" motor-compressor, using F-22. Previously, largest model in this series was  $7\frac{1}{2}$  hp.

Circle No. 189 on Reader Service Card

#### Bottled Milk Cooler

**Product:** Model MC-10 refrigerated cabinet for storage and manual dispensing of bottled or carton milk.

**Manufacturer:** Schaefer, Inc., Minneapolis, Minn.

**Features:** Cabinet of all-steel construction, is equipped with two stainless steel sliding doors, and two adjustable, removable wire shelves. Has adjustable temperature range from 36 F to 45 F, operates on 115



volt circuit, and accommodates 516 half-pint or 344 pint cartons. Cabinet is finished in baked white enamel with stainless steel trim, and is 37" long, 28" wide, and 37" high. Locking device and casters are also available.

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#### Hand Truck

**Product:** New stair-climbing hand truck.

**Manufacturer:** Valley Craft Products, Inc., Lake City, Minn.

**Features:** "Stair-Cart" Model 400 is equipped with special ratchet mechanism which enables it to go up stairs step by step as operator pulls a drive cable. Two-wheel safety brakes allow control of load at all times, eliminating possibility of serious accidents when descending

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FREE AIR SERIES

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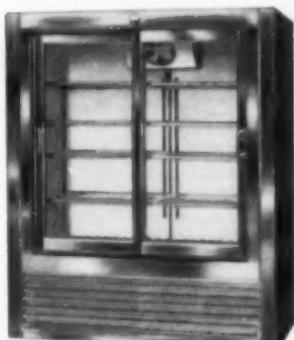
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because it's not only a thing of sparkling beauty, but it's Pinnacle-built, and that can mean but one thing—quality-built. . . . not a cheap piece in its whole construction! Then too, it's simple to install! What's more— you'll never get a complaint because it will give your customers trouble-free service for many years. Exterior is of Stainless Steel, interior of Lifetime Porcelain that remains white indefinitely—never turns yellow or peels! Better insulated doors and jams practically eliminate condensation and chance of short circuiting. Remember, Mr. Dealer—you just can't sell a better unit, regardless of price! It's self-contained, too!



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& AIR CONDITIONING • FEBRUARY, 1956

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With either the Propane or Acetylene Torch-o-matic, you get the *exclusive trigger-control* feature that saves time, saves gas, adds safety to every job. The instant you pull the trigger, the flame lights, and you're ready to go to work. Release the trigger and the flame shuts off. And with the Propane Torch-o-matic, a special two-stage valve lets you control the flame length simply by squeezing the trigger. The Propane Torch-o-matic connects directly to your Propane tank—no intermediate valve fittings are necessary. The Acetylene Torch-o-matic fits your present equipment, features a wide selection of nozzles for every job. Write for complete information.



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The Halide Leak Detector attaches instantly to the Acetylene Torch-o-matic by a spring clip . . . locates slightest gas leak . . . simplifies and minimizes your equipment, yet assures positive detection . . . adds extra safety to the job. Write for details.

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**Spring Loaded Valves**—In an open position, the disc, at its farthest point tends to compress the spring. Thus back pressure at this point is at a maximum.

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stairs or ramps. Belt reel can be adjusted to height of load. Belt is tightened by ratchet and can be wrapped around loads both vertically and horizontally. Unit includes skid rails for loading of truck, padded frame to eliminate scratching of load. Made of aluminum for lighter weight.

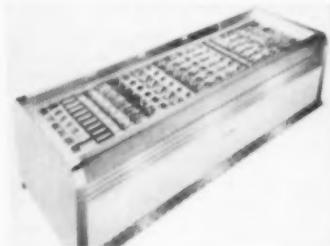
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### Frozen Food Merchandiser

**Product:** Model 4110C "Lo-Front" island merchandiser for frozen foods and other perishables.

**Manufacturer:** Sherer-Gillett Co., Marshall, Mich.

**Features:** The 10' long unit provides storage capacity for 1323 10-



oz. frozen food packages and has 36" overall height, enabling customers to shop from both sides. Unit is available in choice of blue, coral, green, yellow, or white exterior finish with extruded aluminum trim. No glass is used in construction of case, so that cleaning and breakage problems are eliminated. Units are provided with automatic defrost and are constructed so that two or more units can be lined-up for continuous display purposes.

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### Rain-Tight Case

**Product:** New rain-tight case for time switches.

**Manufacturer:** International Register Co., Chicago, Ill.

**Features:** Case is designed to protect time switch mechanism from the weather in outdoor installations. Approved by Underwriters Laboratories. Case is designed to accommodate TS60 standard on-off series and TS66 standard switch with skipper feature. Will also accommodate both T670 series and T960 series mechanisms. Case is of heavy-duty welded steel construction with top-hinged doors, and is 5 $\frac{3}{4}$ " wide, 9 $\frac{1}{4}$ " high, 3 $\frac{3}{4}$ " deep. Convenient knockouts provide access to terminal blocks.

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**6. AGGRESSIVE, CAPABLE MANAGEMENT** Lehigh is a stable company, young in spirit, aggressive in management — and with an understanding of down-to-earth engineering and selling problems. A company that is small enough to take a personal interest in every customer and large enough to carry out full scale development and engineering programs.

**If you sell or use refrigeration —  
it will pay you to know Lehigh better!**

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CONDENSING UNITS and SYSTEMS

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## NON-COMMERCIAL . . .

*Continued from page 48*

install the box. This case then was neatly trimmed with some 25 products of the Denver packing plant, set off attractively by artificial garnish which Stone provided.

With every visitor to the plant being "taken on tour" of its many departments and getting an opportunity to see sausage making at first hand, the display case was thus "exposed" to at least 500 potential refrigerated case prospects, all of whom Stone greeted in person, extending his business card and passing out folders.

The result of this "non-commercial" short-term display was more than two dozen case orders and the development of more than 100 future prospects, according to Stone. Needless to say, the expense represented in hauling the heavy display case to the meat plant, trundling it into the display area and back to Capitol Fixture and Supply Co., was again well justified.

## CUSTOM-BUILT . . .

*Continued from page 47*

their turn for shelf-stocking. Generally, they are not packed out until they have been inside the cooler's storage area for at least three days.

The elder Keeton firmly believes that the way beer cartons are packed these days it takes at least that long to chill them properly. In fact, whenever the demand gets ahead of him and he is unable to give the beverage the full 72-hour treatment, he puts up a sign reading "Warm Beer".

This type of refrigerated storage and selling unit, the Keetons feel, has several advantages. First, a large quantity of beverage may be placed on display within easy reach of the customer on the 12' x 2' shelves. Second, precooled stock can be made readily accessible from the storage area behind the shelves, with no interference from the customer. Third, the forced draft maintains constant circulation of the cooled air.

# WHICH IS A CUBE?



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Automatic ICE CUBE MAKER  
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EASILY ACCESSIBLE  
. . . WE'VE KICKED  
THE DAYLITES OUT  
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BLEMS!

WRITE FOR DESCRIPTIVE LITERATURE AND PRICES  
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has  
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**EVERY  
FOOD  
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## LOAD UP with the **COLDIN** LINE... IT'S DYNAMITE!

From the largest to the smallest, Coldin has a commercial display refrigerator for every budget. Write today for all the facts and set your sights for a bright '56.



Your Key To  
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**COLDIN CABINET CO., Inc.**  
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82

## PROPER PLANNING . . .

*Continued from page 45*

field of mechanical planning for food stores—and often the most neglected.

Experience has shown that the most common cause for malfunctioning of display cases is the improper handling of drains or drain connections for such cases. On low temperature equipment this problem is even further accentuated. Practices which might be satisfactory enough in connecting other types of drains may render low temperature equipment completely ineffective.

Here are some general requirements which should be observed in planning drains for refrigerated fixtures. All drain pipe and fittings must have at least 1" diameter. Every section of pipe which is connected directly to any case must have adequate slope, with  $\frac{1}{4}$ " per foot being considered the minimum. On low temperature equipment, a drain trap must be installed. This trap must

not be located closer than 12" to the outlet from the case.

Considered as definitely unacceptable are drainage connections which are run in small diameter copper tubing, thus restricting the flow of drain water; drain lines which are teed directly from one case to another and then into a common drain, thus preventing any slope in the line between the two cases; and, of course, drain lines which are run uphill.

Experience has shown that connections so made may lead to improper disposal of defrost water from the case or cases involved, resulting in inability to maintain proper temperatures in the refrigerated equipment. The defrost system and all other factors of operation might be performing perfectly, but if defrost water cannot get out of the drain trough of the case it can only be a matter of days before there will be no circulation of refrigerated air in that case.

Although this problem of drainage is a serious one, it really is not difficult to understand. While large volumes of water flowing through



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DEPARTMENT MOTOR



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surmount this problem, however.

For instance, a cross-over may be used where a drain line conflicts with another pipe. Or, a trap may be made up of two 45-degree elbows and one 90-degree ell. If there still is not enough room, the trap can be inclined somewhat, just as long as the top of the bottom ell is below the bottom of the outlet pipe. Another alternative is to trap the pipe at the end of a run by simply using one 45-degree ell with a short nipple and then a 90-degree ell.

The third factor which requires pre-installation consideration is the matter of electrical facilities. While this phase of the installation normally is not as involved as the two already discussed, still there are some pointers that may prove helpful.

Of prime importance, of course, is the need for an adequate electrical supply to the building. Very often in older stores the entrance supply will be inadequate to handle the new equipment being installed. A quick inspection of the facilities should disclose whether or not a greater power supply is needed.

If such is the case, the only solution is to provide for the installation of the required facilities by a competent electrical contractor.

When providing added electrical facilities, consideration should be given to the need for adequate 115-volt supply for the lights and fans in display cases. In the case of frozen food cabinets or any equipment using electric defrost facilities, electrical lines will have to be run from the defrost control to the fixture. Every dealer should be thoroughly familiar with the specific requirements of the equipment he sells, but chances are that 230-volt supply will be used.

#### Consider 3-Phase Power

The question of adequate supply for the condensing unit motor also should be examined carefully. If 3-phase current is not available in the building, but can be provided at a reasonable cost, such a supply should be suggested to the store management because of its greater efficiency and freedom from electrical service problems.

Not the least important of the

factors which must be considered in the mechanical planning of food store installations is the need for maximum economy in space utilization. So badly do most such stores need space for bulk storage of their merchandise that the management begrudges every square inch that must be allotted to refrigeration equipment. Thus the problem of space becomes a prime consideration in the planning of the machinery or equipment room.

One approach to this problem in multiple-unit installations is the "stacking" of condensing units in some sort of a rack to minimize the amount of floor space required. Many such racks, providing for double or triple decking of the units, are available commercially. If necessary, of course, such racks can be fabricated of angle iron by the dealer to meet any specific situation.

Obviously, the presence of a basement area beneath the sales floor of a food market would minimize or even eliminate many of the problems discussed here. In such a store, for instance, no refrigerant lines would have to be

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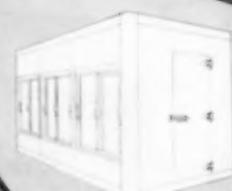
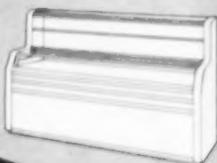
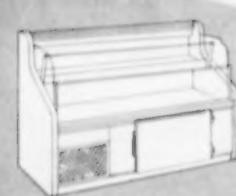
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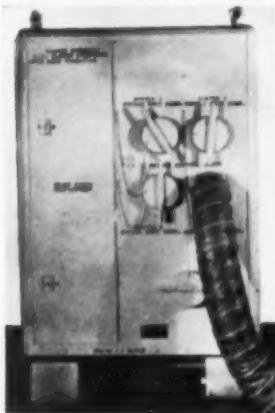


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run in the sales area, as they could simply be dropped straight through the floor into the basement. Likewise, slope in drains becomes no problem, as they too can be dropped straight down into the basement. Today's growing trend, however, is toward one-floor construction and operation of food markets, so all of the factors in this discussion will continue to be of increasing importance to every dealer selling and installing equipment for such applications.

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#### KOPPERS BUYS ASSETS OF INDUSTRIAL SOUND

Koppers Co., Inc., Pittsburgh, has acquired the assets of Industrial Sound Control, Inc., Hartford, Conn., designer and manufacturer of noise control equipment.

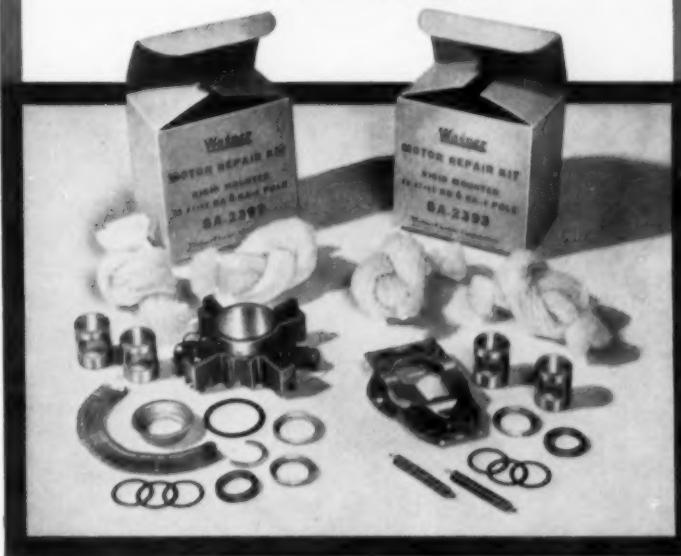
Industrial Sound Control recently entered the air conditioning field with the Aircoustat, a unit silencer developed for the silencing of air-borne noise in ducts.

Koppers will operate the business as the Industrial Sound Control Dept. of its Metal Products Div., with headquarters in Baltimore, Md.

here's a tip for **MOTOR REPAIRMEN** from  
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# THE COMMERCIAL REFRIGERATION and AIR CONDITIONING

## APPLICATIONS MANUAL

Readers are invited to submit their problems to this department. Each letter of inquiry will be answered personally by the author. All problems should be clearly and completely stated and addressed to: COMMERCIAL REFRIGERATION AND AIR CONDITIONING, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

### Hotels Are Good (but Conservative) Prospects, So Combine "New" with "Old" To Sell to Them

by Hugo C. Smith

THE past five years or so have seen a large number of hotels completely remodel their refrigeration facilities. For the most part, this conversion has involved a complete change-over from ammonia to Freon operation. Most hotel operators, however, are extremely conservative in their expenditures for new equipment, so the sales engineer who proposes the most ingenious and economical use of existing facilities is apt to be given a warm reception by the management.

Existing ammonia or carbon dioxide equipment found in most hotels which are 20 or more years old generally falls into a single pattern. For the most part, these installations use circulating brine, although some may employ a combination of circulating brine and direct expansion.

#### Ice Making Facilities

Ice making facilities usually are provided in a large brine tank, with direct expansion coils immersed in this tank. The brine is circulated through the ice making tank and then through the pipe coils in the various walk-in coolers and reach-in cabinets which serve the kitchen and food preparation areas. In many cases, it is then bailed off through the circulating chilled water system.

After leaving the ice making tank, the brine usually is routed first to the freezer boxes, which generally are constructed so that they open directly out of other coolers. These freezer rooms have more coil surface than the 35 F rooms. This added coiling, plus the fact that the brine is circulated through the freezers immediately after leaving the ice making tank, theoretically is supposed to produce adequately low tempera-

tures in the freezers. In actual practice, however, this arrangement never proves too satisfactory.

In the first place, freezers of this type simply are not designed to hold zero temperatures. Most of them will not go much below 20 F, which of course is not cold enough to keep frozen meat and other products for any length of time. Secondly, the temperatures obtained usually are erratic, and fluctuate when heavy



loads are placed on any part of the system. Finally, defrosting of these freezers necessitates a complete shutdown of the refrigeration system.

Walking into a hotel of from 500 to 2000 rooms and converting all its existing refrigeration to Freon in such a way that the hotel management will accept and buy the job presents a real challenge to the application engineer. As indicated previously, the best possible use must be made of existing facilities.

The first problem in a job of this kind is to find a centrally located compressor room. This room should

be near power and water or water tower facilities. The room also should have either adequate gravity or mechanical ventilation, otherwise trouble will be experienced with the heaters in the starters.

In general, a separate system should be provided for each fixture. If cost is the prime object, however, groups of two coolers of similar temperatures can be multiplexed together at a sacrifice of some temperature and humidity control.

The application engineer may find it to his advantage to multiplex the freezers, if they are not too large. One hot gas defrost unit can be used to operate coils in two or three small freezers with very little difficulty.

#### Increasing Freezer Space

Many hotels are interested in increasing their freezer storage space. In this respect, however, it must be borne in mind that many chefs will expect to go into a zero F box and pick out certain products for a la carte service. This is a little difficult to do, inasmuch as the product cannot be thawed quickly enough from zero F. We suggest that for this purpose a small chef's freezer be provided for short term storage (not over six days) and that this freezer be carried at from 10 to 15 F.

Many times a freezer compartment already may be provided in a reach-in box, and such an arrangement will provide excellent facilities for this type of service. These freezer compartments usually can be identified by the greater amount of coils, and also by the fact that they are separated from the rest of the refrigeration facilities.

#### Problems With Pull-Outs

In general, the old fashioned chef's box equipped with pull-out drawers is very hard to refrigerate. Hotel maintenance people, however, should be able to remove these pull-out units and replace them with standard swing-type refrigerator doors. Many times, after the brine coils are removed, the hotel maintenance staff may find it possible to extend the shelves and thus gain considerable storage space.

Care should be taken to amply coil all coolers and all reach-ins. Hotel service today is extremely heavy, and so extra heavy service factors should be used. Figure coils on the basis of 10-degree temperature difference and compressors on 16-hour operation.

Many hotels have need for periodic short-term air conditioning in such areas as ballrooms or private dining rooms used for wedding receptions,



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unexcelled for all low-temperature applications.



**Unmatched Stability** — under all conditions of refrigerant dilution, heat and pressure.



**Specified:** by nearly all original equipment manufacturers.



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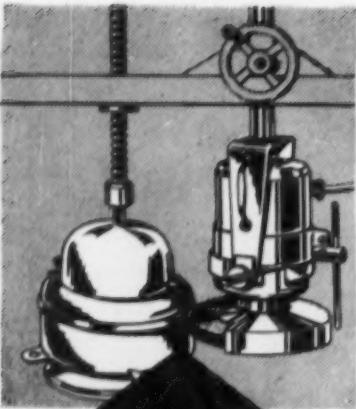
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V-METH-L • CAR-O-GAS • PERMAGUM • PRESSTITE TAPE  
SUNISO REFRIGERATION OILS  
KIRKWRAP • WATER TREATMENT CHEMICALS

Available in Canada and many other countries



# ONE HERMETIC Repair Job per Week will pay for your **FRANKELL** HERMETIC COMPRESSOR OPENER \*

Simple to operate. Compact, semi-automatic machine that can easily open any compressor up to 20" in diameter, regardless of the location of weld.

Millions of hermetics in use. Thousands in need of repair. The Frankell *liberal payment plan* for the compressor opener... helps you obtain *your share* of this profitable business.

Get the full story at your local refrigeration jobber or write direct to Frankell.

(Pat. Pend.)

ADVERTISING  
AGENTS AVAILABLE  
AT YOUR LOCAL JOBBER

**FRANKELL MFG. CO.**  
1074 HOME ST. • NEW YORK 59, N. Y.

Circle No. 69 on Reader Service Card

parties, or similar affairs that last for perhaps 3 hours. Rather than tearing out and junking the ammonia compressor which powered the old refrigeration facilities, the enterprising application engineer well may be able to adapt it for use in air conditioning this type of public room.

To effect this conversion, the ice cans are removed and the brine is drained from the ice making tank and replaced with sweet water. The existing coils are then used to chill the water and build an ice reserve. The chilled water is piped directly to the rooms to be air conditioned. The existing circulating pumps are used to circulate the water through forced-air coils provided in the conditioned areas.

These installations usually possess considerable direct expansion tonnage which, of course, is greatly increased by the storage effect of building ice on the direct expansion coils in the ice making tank.

In many instances, hotels will want to cut the costs of revamping their refrigeration facilities by handling the plumbing and wiring with their own maintenance personnel. In any event, be sure that your plans for any conversion program have the approval of the institution's chief engineer before they are sub-

mitted to the management.

And remember — here is one type of customer who will invariably demand "the mostest for the leastest". The contractor who indicates his willingness and ability to meet this demand will more often than not get the job.

## USAIRCO CONTRACTS TO BUY JORDON FIRM

United States Air Conditioning Corp. has contracted to purchase for cash all the outstanding stock of Jordon Refrigerator Co., Philadelphia, announces David E. Feinberg, president of Usairco.

Jordon manufactures commercial and home refrigerators and freezers, employing 300 persons in its newly-completed 102,000 sq. ft. plant. Feinberg said that no changes are planned in the present operations or personnel of Jordon, which will be operated as a subsidiary of Usairco.

The announcement also stated that Usairco will utilize these new East Coast plant facilities for manufacture of certain of its air conditioning products, as well as for the regular Jordon equipment line.

## REFRIGERATOR - FREEZER COMBINATIONS

DRY BEVERAGE COOLERS MILK DISPENSERS



Our 21 cu. ft.  
Harvest Queen

A full range of sizes — color styled for  
YOUR market. Let us help YOU to those  
extra profits.

United Quality  
+ Factory Price  
=EXTRA PROFIT

How would YOU like to be competitive in quality and price on every box YOU offer. YOU can be when you sell United equipment on our factory purchase basis.

We specialize in Upright  
Freezers for FARM, HOME  
& COMMERCIAL USE

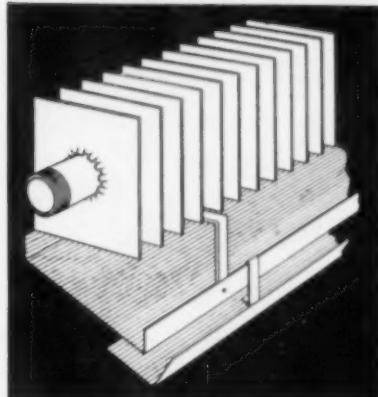
UPRIGHT FREEZERS  
DRY BEVERAGE COOLERS  
MILK DISPENSERS

DESIGNED, ENGINEERED AND MANUFACTURED BY  
**United** REFRIGERATOR COMPANY  
HUDSON, WISCONSIN  
WRITE, WIRE OR PHONE TODAY

Circle No. 70 on Reader Service Card

FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

Circle No. 71 on Reader Service Card



## FRICK Square- finned pipe

Is ideal for cold storages, freezers, food processing and meat packing plants, etc. Manufactured from 2" dia. F.W. steel pipe and 7" square 14-gauge fins, Frick finned pipe gives maximum heat transfer per dollar invested. Each fin is bonded to the pipe under tons of hydraulic pressure. All assemblies are hot-dip galvanized.

These new Frick finned coils require only one-quarter of the space needed for bare pipe having the same surface. This new finned pipe is available in lengths of 5', 6'8", 10' and 20'—and with fin spacing of 1" and 1 1/2"—to fit every application.

See your nearest Frick Branch or Distributor for complete details, or write for Bulletin 158.



DEPENDABLE REFRIGERATION SYSTEM  
**FRICK** CO.  
WAYNESBORO, PENNA.  
U.S.A.

**...STOPS  
CONDENSATION  
DRIP**

**NoDrip PREVENTS RUST  
— ANYONE CAN APPLY**

NoDrip plastic coating is easily applied to tanks, containers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless 100% moisture-proof covering that is effective as soon as dry. Acid, alkali and brine resistant.

### FREE...

Interesting 32-page Handbook shows what NoDrip is and what it does.

**SEND COUPON TODAY**

### SEND NoDrip HANDBOOK

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**J. W. MORTELL CO. 553-B BURCH ST. • KANKAKEE, ILL.**  
TECHNICAL COATINGS SINCE 1895

Circle No. 72 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956



## Newest Accepted Design in Refrigeration Duty Motors

• This trouble-free motor starts and runs refrigeration compressors under the most severe conditions. It has just three parts which wear because of motion or electrical contact—the bearings; contact points on the stationary part of the switch; and the centrifugal parts of the switch. Excellent design holds wear on these parts to a minimum. Servicing is practically eliminated. Motors are Underwriters' approved.

Write for Peerless Refrigeration Motor Bulletin. It shows recommended wire sizes, construction features and answers those questions asked most often by men who service and distribute refrigeration duty motors. It shows you how motor service and maintenance can be held to a minimum.

ELECTRIC MOTOR DIVISION  
**THE Peerless-Electric COMPANY**  
FANS • BLOWERS • ELECTRIC MOTORS • ELECTRONIC EQUIPMENT  
WARREN, OHIO

Circle No. 73 on Reader Service Card

## Set it and forget it...

New Ranco air conditioning control provides dual-pressure cut-outs, high pressure limit stop



**Models**  
**012-1593,**  
**012-1594,**  
**012-1595**

Dual-pressure controls with manual reset for air conditioning systems

Here's a new easy-to-install control that assures faultless performance of every air conditioning system you service. High pressure safety cut-out and non-adjustable limit stop prevent service adjustment above the safe maximum. Low pressure safety cut-out prevents excessive low-pressure operation. And manual reset bar controls both cut-outs.

This unit—produced in three models for varying requirements—is only one of the literally thousands of Ranco Controls produced to simplify your service problems, cut your service time and increase your service profits.

Make your Ranco wholesaler the first stop on every service call.

**Ranco Replacement Reference No. 1544**  
offers you additional help in selecting the right Ranco Control for the job . . . describes nearly 5,000 Ranco Controls by specific application. Buy your copy from your wholesaler today (not available from the factory).



# Ranco Inc.

COLUMBUS 1, OHIO

World's Largest Manufacturer of Refrigeration Controls

Circle No. 74 on Reader Service Card

FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

## THE SERVICE MAN'S DEPARTMENT

# HERE'S HOW!

### Ice-Bound Freezer Doors Freed by Electric Heat

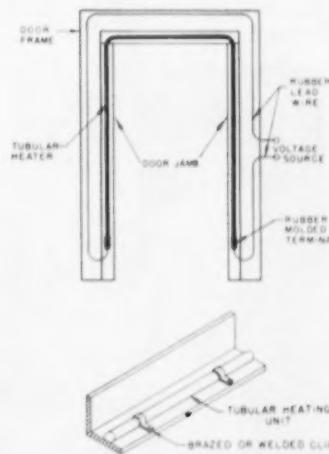
Adding small controlled amounts of electric heat to door jams of walk-in freezers prevents door liners from freezing to the jamb.

In normal operation, the opened door admits an inrush of warm air over the cold jamb. The resulting condensate quickly freezes when the door is closed, forming an ice-lock between door liner and door frame, which prevents the door from opening freely.

Forced opening of such ice-bound doors results in costly maintenance to doors, door-liners, and hinges, as well as damage to conveyor carts used as battering rams.

In the installation shown in the attached drawing, electric tubular all-metal heating elements are used inside the door jamb, directly opposite the liner-seal on the door. Part of the old door frame was removed and replaced with angle iron sections containing the clamped-in or brazed on tubular element.

A low cost voltage regulator and on-off switch are located outside the door for maintaining a narrow strip of heated surface at about 40



F. The thin, fully-enclosed element heats up quickly, is shockproof and cannot be penetrated by frost or moisture.

Doors so equipped open easily, preventing costly maintenance and inefficient operation due to air leakage around broken or distorted door liners. Even under constant usage, the operating costs of this low wattage element is claimed to be negligible. Basic unit can be adapted to practically any door design and usually requires from 200 to 300 watts, or approximately 15 watts per foot, operating on 115-120 line voltage.

Marketed under the trademark Chromalox Tubular Elements the heating units are available from Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh 8, Pa.

I DO IT

THIS  
WAY

WHEN soda water produced by a fountain unit doesn't taste right, it is probably the result of improper carbonation of the water. If the CO<sub>2</sub> pressure reads between 90 and 120 lbs., the trouble will usually be found by checking the water pressure. If water pressure is high, installation of a pressure regulator set at 20 lbs. normally eliminates the problem.

Al J. Delpiaz  
Dennison, Ohio

BUY FROM YOUR  
REFRIGERATION WHOLESALER

### "Thank You" Letters Build Future Business

The key to any successful service business is to keep your customers thinking of your organization favorably, so that they will automatically call you whenever future trouble arises. One Denver firm helps achieve this end by sending out a "thank you" form letter every time that a service operation is completed.

This letter indicates that the service firm performed a repair job on the customer's equipment on a particular date, and expresses the fact that this business was sincerely appreciated. It concludes with an invitation to call the service firm for any adjustments or to voice any complaints.

Invariably, the owner of this service business finds, these letters come as a pleasant surprise to the customers. People appreciate a nice touch of this sort, he reasons, and the use of these letters greatly increases the chance that his firm will be called the next time service is required.

I DO IT

THIS  
WAY

MOST cooling towers have an opening on only one end, which makes it difficult to clean out rust and scale which have accumulated. I have found that by cutting a hole in the closed end of such towers, I can easily flush them out with a water hose. The hole may be sealed up with a metal patch and rubber gasket, which are attached to the tower with sheet metal screws.

Dwaine Deak  
Weirton, W. Va.

Circle No. 76 on Reader Service Card

## Handy Tube Bender

*Smoothly Bends ANY  
Pipe or Tubing*

$\frac{3}{8}$ " to  $1\frac{1}{8}$ " O.D.



• Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle. U and offset—every time. Eliminate need for els. No more guesses—no kinks! Save enough time, labor and money on ONE Job to pay for your Handy Bender.

See your supply house—or write for free folder today.

**HOLSCLAW BROS., INC.**  
430 N. WILLOW ROAD — EVANSVILLE, IND.

**Clean Fittings FASTER  
... for Better  
Sweat Connections!**



### Schaefer COPPER TUBE FITTING BRUSHES

Here's the quick, easy, "painless" way to clean copper tube fittings for more secure leakproof installations! Just a quick twist of the Schaefer Brush and the fitting is clean—in a fraction of usual time, and without sore fingers. Complete range of sizes for O.D. and nominal fittings, with rustproof stainless steel wire bristles and comfortable hand grips. Write for prices.

**Schaefer BRUSH  
MFG. COMPANY**

117 W. WALKER ST., MILWAUKEE 4, WIS.  
Write for details on special brush needs.

**BUY SCHAEFER . . . IT'S SAFER**

Circle No. 75 on Reader Service Card  
92

### HAWAIIAN SERVICEMEN VIE AT TUBE BENDING



**TUBE BENDING CONTESTS**, it seems, are the same in Hawaii as they are here. Pictured below are local servicemen and engineers from the U.S. armed forces who participated in a contest staged by the refrigeration department of Von Hamm Young Co. and Refrigeration Service & Supply Co. of Honolulu, with the cooperation of Imperial Brass Mfg. Co. Winner Masa Sugihara was awarded a flaring tool for his efforts. Examining the completed projects is Jim Norris, Imperial Brass representative. Sponsors of the contest are shown in the photo above. From left, they are: Jim Wilson, Von Hamm Young Co.; Norris; and Harry Colvin, Ray Matthews, and Bob Okimoto, all of Refrigeration Service & Supply Co.



### KELVINATOR EXPANDS '56 SERVICE TRAINING

A three-week training program for factory service management personnel and two three-day meetings for zone and distributor service managers have been held by Kelvinator as part of an overall service program for 1956.

Factory service personnel attended a three-week refresher course beginning Jan. 3, according to R. S. Geran, Kelvinator service manager. Distributor service managers attended the Detroit meetings Jan. 9, 10, and 11, and zone service managers attended Jan. 12, 13, and 14.

After the Detroit meetings, sample meetings for dealer service

men and service agents are being held in each distributor and zone area. These meetings will set a pattern to be carried on by local service personnel with dealers.

### PLUMBING-HEATING SHOW DATES SET

The 1956 National Plumbing and Heating Exposition is scheduled for June 11-14 in the Milwaukee Auditorium.

The 74th annual meeting of the National Association of Plumbing Contractors will be conducted in conjunction with the exposition, and over 11,000 are expected to attend.

## OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted," \$6.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢. Boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢. All classified advertising payable in advance.

### POSITIONS AVAILABLE

**FIELD REPRESENTATIVE FOR HOUSTON AREA** — If you are a technical graduate, 25 to 32 years of age, with experience in refrigeration and/or air conditioning, an opportunity for advancement with an outstanding and progressive company is available. After a factory training program, very interesting work awaits you calling on contractors, wholesalers, and manufacturers of all types of equipment. Very liberal salary, bonus, and expense allowance arrangements for an energetic sales engineer. Write Box 2156, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

**FIELD ENGINEER**, a technical graduate or equivalent, 25 to 32 years of age, with experience in refrigeration and air conditioning, required to call on contractors, wholesalers, and manufacturers in PITTSBURGH-CLEVELAND AREA. After a factory training program, very interesting work awaits you. Remuneration based on liberal salary, bonus, and expenses. Write Box 2256, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

### REPRESENTATIVES WANTED

**MANUFACTURER'S REPRESENTATIVE** calling on refrigeration jobber and user trade to sell Rectorseal #2, the positive leak preventer. See our ad on page 118. Many territories open, large number of job accounts already established. This item offers the aggressive commission agent already carrying refrigeration lines excellent profit possibilities. For additional information write, giving brief outline of your company, including lines now handled, territory covered, and references. **RECTOR WELL EQUIPMENT COMPANY, INC.**, 2215 Commerce Street, Houston 2, Texas.

### BUSINESS OPPORTUNITIES

**SALESMEN-AGENTS** make extra money sell nationally advertised automatic Sno-ball, Sno-cone machines on easy terms. **SNO-MASTER MFG. CO.**, 124-CR Hopkins Place, Baltimore 1, Maryland.

### NEW SIMPSON REP

E. A. Dickinson & Associates, Milwaukee, has been appointed to represent Simpson Electric Co. in part of Wisconsin. Edward A. Dickinson, one of the principals, formerly was with Cutler-Hammer, Inc., and has been a manufacturer's representative since 1947.

## YORK DISTRIBUTORS HONORED FOR SALES

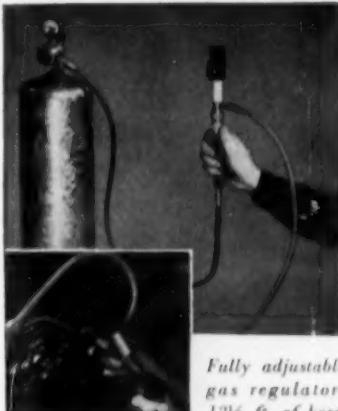
York Corp. recently honored 20 distributors and its Houston district for outstanding 1955 sales performances.

The "Medal of Merit" went to distributors for best overall performance, while the winning district was presented the "Veep" award. The Desert York Co., Las Vegas, was cited as the only distributorship to earn the Merit honor five times. Other distributors cited were:

Foy's Refrigeration Service, Coffeyville, Kans.; Ballard Oil & Equipment Co., Portland, Me.; Modern Wholesalers, Inc., York, Pa.; York-Chico Co., Chico, Calif.; Hawkins Refrigeration & Distributing Co., Fort Smith, Ark.; York-Lexington Co., Lexington, Ky.; A & M Supply Co., Inc., Fort Worth; Gulf-York, Inc., New Orleans; Hill York Corp., Miami; Clark's Service Co., Inc., Muncie, Ind.; York-Pacific Co., Sacramento; Arizona York Refrigeration Co., Phoenix; Ralph Larson Co., Sioux Falls; Pettus Refrigeration Co., Mobile; Northern Air Conditioning Co., Minneapolis; Goodling Refrigeration Co., Lancaster, Pa.; Saginaw Distributors, Inc., Saginaw, Mich.; York-Imperial Co., El Centro, Calif.; and Fred Vogt & Co., Minneapolis.

**FAST  
DEPENDABLE  
ECONOMICAL**

## PREST-O-LITE Trade-Mark Leak Detector Outfit



Fully adjustable gas regulator, 12½ ft. of hose, precision handle, leak detecting stem, and suction hose complete this valuable kit.

You can quickly locate the most minute leaks of halide refrigerant gases with this handy, air-acetylene, leak detecting outfit. An extra-long hose lets you work unhampered in those hard-to-get-at places. And a shutoff valve and built-in pilot flame control in the handle give you real convenience and economy. Ask your LINDE jobber for a demonstration. Or write **LINDE AIR PRODUCTS COMPANY**, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Union Carbide Canada Limited, Toronto.

**GET IT FROM YOUR  
LINDE JOBBER**

**Your Customers' Best Buy . . .**

**IDEAL**

**Speed-Freeze**

**PRODUCTS**

**BEVERAGE COOLERS**  
unexcelled storage capacity  
(56 cases 12 oz. - 8 ft. cooler!)

**INSTANTANEOUS  
DIRECT DRAW  
DRAFT BEER COOLERS**  
(with refrigerated faucets)

**IDEAL**

**COOLER CORPORATION**

2953 Easton Ave. St. Louis 6, Mo.

Circle No. 78 on Reader Service Card

The terms "Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

Circle No. 77 on Reader Service Card

**MORE  
FAMOUS NAMES  
SELECT**

*m<sup>c</sup>Quay*

**RIPPLE-FIN COILS for  
AIR CONDITIONING UNITS!**

**LEWYT  
AIR  
CONDITIONER  
CORPORATION  
BROOKLYN,  
NEW YORK**

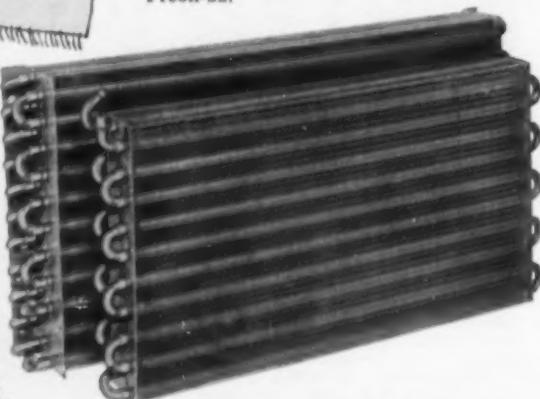
**Admiral  
CORPORATION  
Chicago, Ill.**

**AMANA  
Refrigeration,  
Inc.  
AMANA, IOWA**

**bryant  
heater  
DIVISION  
TYLER,  
TEXAS**

**The  
Coleman  
Company,  
Inc.  
WICHITA, KANSAS**

**GIBSON  
REFRIGERATOR  
COMPANY  
GREENVILLE,  
MICHIGAN**



**Maximum heat transfer efficiency of  
Ripple-Fin Coils is a McQUAY EXCLUSIVE!**

Only McQuay gives you Ripple-Fin surface—the product of years of research that produced the ultimate in heat transfer for any weight metal as well as construction ruggedness and eye appeal.

***m<sup>c</sup>Quay* INC.**

**★ AIR CONDITIONING ★ REFRIGERATION ★ HEATING**

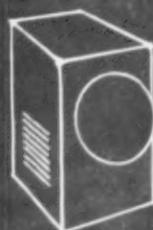
Write for engineering assistance on any coil problem. McQUAY, INC. 1643 Broadway N. E., Minneapolis 13, Minn.



Circle No. 79 on Reader Service Card

# Air Conditioning Section

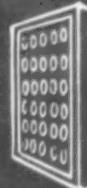
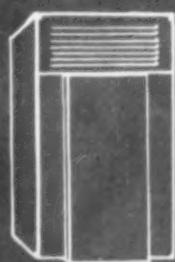
COOLING • HEATING • CIRCULATION AND HUMIDITY CONTROL



RESIDENTIAL



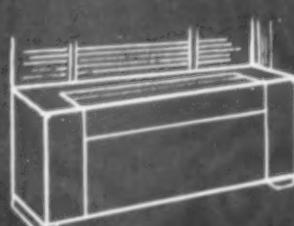
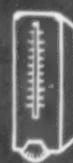
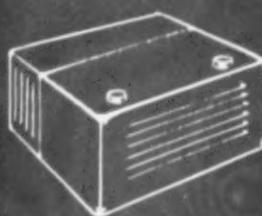
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COMMERCIAL



INSTITUTIONAL



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## *You Are In The Business . . .*

A recent survey made for COMMERCIAL REFRIGERATION AND AIR CONDITIONING magazine established the fact that:

74.3% of the respondents indicated they were "in the air conditioning business".

Of those in the air conditioning business:

86.9% sell Air Conditioning Equipment of some type

78.7% sell Window or Room Air Conditioners

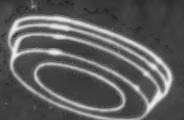
84.6% sell Commercial Packaged Air Conditioners

74.8% sell Central-Plant Air Conditioning Systems

77.4% sell Year-Round Residential Air Conditioners

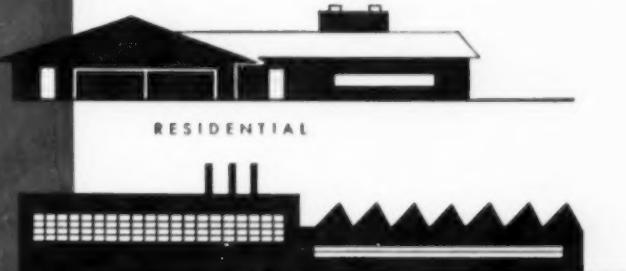
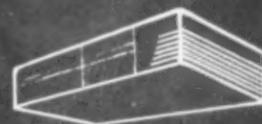
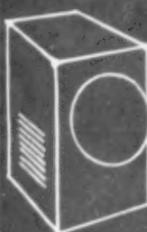
88.7% service Air Conditioning Equipment

YES!! THE READERS OF COMMERCIAL REFRIGERATION AND AIR CONDITIONING MAGAZINE ARE DEFINITELY IN THE AIR CONDITIONING BUSINESS!!

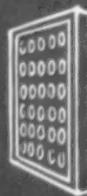
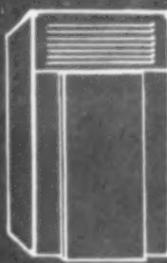


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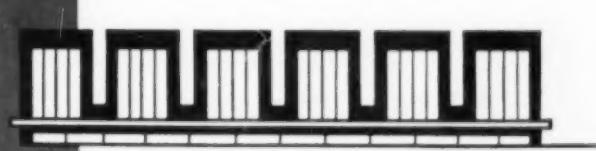
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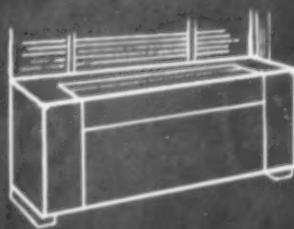
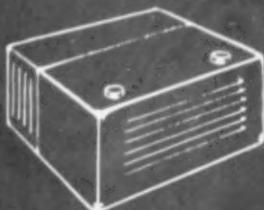
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77.4% sell Year-Round Residential Air Conditioners

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YES!! THE READERS OF COMMERCIAL REFRIGERATION AND AIR CONDITIONING MAGAZINE ARE DEFINITELY IN THE AIR CONDITIONING BUSINESS!!



# Food Stores: *A-1 Prospects for Air Conditioning*

**HERE'S WHY:** In addition to providing comfort for both customers and employees, air conditioning offers these money-making advantages to food store operators . . .

1. Simplifies problems of store layout
2. Reduces likelihood of food spoilage
3. Improves quality of merchandise
4. Increases efficiency of equipment
5. Provides greater cleanliness at lower cost

by Edward Dowis

AIR conditioning can and does provide many advantages to the food merchant in addition to providing comfort for himself, his employees, and his customers. In fact, a recent issue of "Nargus Bulletin", official publication of the National Association of Retail Grocers, reports that "costs in spoiled merchandise, help inefficiency and fan operation may actually exceed the cost of an air conditioner."

While comfort itself is often a sufficient incentive for purchase of air conditioning, these other advantages may be even more important and, if properly explained, should help convince almost any grocery store or delicatessen operator that air conditioning equipment is a self-liquidating investment.

It is universally recognized that quantity merchandising of perishable goods requires maximum utilization of open display refrigerated equipment. Location of such equipment near a window or door may be necessary, from a merchandising standpoint, in an unconditioned store because customers are inclined to linger in the better lighted and ventilated areas. Air conditioning, combined with good lighting, makes all areas of the store equally attractive, so shelving and refrigerated cases can be located to best advantage in relation to each other.

Location of cases near windows or against exposed walls may subject them to widely varying solar loads which may cause undesirable warming of the case at certain times, often the busiest shopping hours. Air conditioning will compensate for much of this variation, or permit relocation of the cases.

Fresh fruits and vegetables, candy, baked goods and other perishable merchandise has a much longer shelf life if displayed in a conditioned atmosphere. Both temperature and humidity affect the appearance and quality of such merchandise. Even staples such as sugar, salt and cereals are more effectively preserved where humidity is not excessive.

Spoilage is reduced indirectly because customers remain longer in a conditioned store and shop more leisurely. They are more easily attracted by inducements to purchase items which the management desires to move quickly. Salespeople in attractive and comfortable surroundings are better able to push the sale of such items.

In addition to preventing loss by spoilage, merchandise displayed in a conditioned store will retain its appearance and quality better than in an unconditioned one. Warm moist air entering refrigerated dis-

play cases will cause excessive sweating of cooled packages.

Hygroscopic materials, such as paper and ink used in packaging, and many merchandise items including soaps, matches, cereals and store packed goods, retain their quality better in a conditioned store. This is particularly true of materials stored in open display refrigerated cases.

Cooling loads of open cases are high under best conditions. They may be impossible, with standard equipment, where conditions are bad. Warm moist air,

particularly if circulated by a ceiling or wall fan which throws it into the case or over merchandise, will cause excess frost or condensation and may overload equipment. With air conditioning, conduction, radiation and air change loads will be predictable and fairly constant.

An indication of improper air circulation within a case is excessive icing at the back and rear inside corners. Uniform fine frost is normal on the back, sides and shelves of most low temperature cases but localized concentration at corners and other specific spots usually indicates the presence of undesirable air currents. In an air conditioned store, supply grilles can be adjusted to minimize or compensate for such drafts due to traffic, opening and closing of doors, discharge from condensing units, or other sources.

#### Air Conditioning Improves Case Operation

Some display cases with high velocity circulating fans spill as much as 20% of the air outside the case. This must be replaced with air from the store which, if warm and humid, inevitably results in excessive sweating or frost accumulation on both packages and coils or plates, also adding to the load.

Temperature in open display cases sometimes varies as much as  $1\frac{1}{2}$  degrees per inch from bottom to top, due to distance from the coil. Thus, with packages stacked 10 inches high, the top layer might be 15 degrees warmer than the bottom. Much better uniformity is possible with controlled temperature and air flow in the store.

It is noteworthy that ice consumption is materially reduced in stores which use it on their fresh vegetable display racks. Some operators rate this as one of the important advantages of air conditioning.

Important in the operation of any food store, is the maintenance of a high degree of cleanliness. The cost and time consumed in this work is definitely reduced by the constant filtering of recirculated and ventilating air. By slightly pressurizing the interior of the store, infiltration of airborne dirt is almost eliminated.

#### Year-Round Cleanliness Can Be Provided

Cleanliness can be made an all-year benefit of air conditioning when heating is a function of the air circulating system, even when part of the heating load is handled by direct radiation or unit heaters. The psychological value of an immaculately clean store, in which foods are openly displayed, is self evident.

Any desired comfort condition can be obtained by either of several combinations of wet and dry bulb temperatures. By reducing the wet bulb temperature, a slightly higher setting of a dry bulb thermostat will give the same measure of comfort with lower relative humidity. This is desirable for storage of many materials and to minimize condensation and icing.

New installations may be designed for low humidity. Existing ones can be made to maintain lower humidity by reducing air velocity through cooling coils. This can be done by bypassing some air around the coil,



**IN THE SALES AREA** conditioned air can be provided through strategically located ducts (above) leading from remotely located equipment, or by free-standing package conditioners (below) located within the actual merchandising space.



by reducing fan speed or adjusting dampers. By-passing is usually best since it alters overall air circulation least. Many package conditioners have by-pass dampers as standard equipment. Opening these will maintain lower humidity in the conditioned space.

In extreme cases, it may be necessary to reheat conditioned air to keep the conditioner operating long enough to remove excess moisture without getting store temperature too low. A humidistat may control a heating coil containing steam or warm water. An economical source is the discharge from a water cooled condenser. The heating coil may be located anywhere in the conditioned air stream.

#### **Odor Elimination Is Important Factor**

An important function of air conditioning is the elimination of objectionable odors. This is usually accomplished by admitting sufficient outside air to reduce odor concentration so it will not be noticeable. Provision should be made to regulate outside air intake to the amount actually needed, which may vary from time to time.

To conserve conditioned air, activated carbon panels or cells are sometimes placed in the air stream in place of filters. These absorb odor causing vapors and reduce outside air requirement. Their use is indicated when outside temperature or humidity conditions are severe.

Coil odor is sometimes caused by an accumulation of substances on the cooling coil. It may be noticeable only for a short while after start up, or may be continuous. Tests indicate that coil odor is most apt to occur when there is only limited condensation, much of which is re-evaporated into the air stream. Where the coil is operated at a temperature which permits water to drip freely from it, coil odor is less likely to occur.

#### **Roof Installation Solves Floor Space Problem**

It is believed that the material from which a coil is made, helps determine its likelihood of developing coil odors. All aluminum construction is best, copper tube with aluminum fins next and all copper poorest, from the standpoint of eliminating coil odors.

A major problem in air conditioning food stores is often lack of floor space. This can sometimes be solved by installing all equipment on the roof. If necessary, the load may be distributed between several small units to avoid concentration of weight or structural changes. Installation of a single unit is usually not too difficult if properly supported on beams resting upon sustaining walls or columns. Such installations should be supervised by a qualified architectural engineer.

Overhead ducts may be constructed of light weight, non-metallic material with good insulating qualities and outlets placed where most desirable from an operating standpoint. Equipment can be weatherized so as to require no additional shelter.

A noteworthy advantage of roof installation is that it may be serviced at any time, either before, during



**BEHIND THE SCENES** air conditioning is equally important in unrefrigerated areas (above) as an aid to increasing the storage life of all dry produce, and in processing rooms (below) as a means of insuring sanitary, fog-free packaging of perishables.



or after business hours without interfering with the work of store personnel.

Because of large floor area, it is common practice to pick up return air through grilles near the floor in one or more walls. Use of space under shelves may be used as a return plenum by placing grilles in the toe space at the bottom. Air entering these grilles can be withdrawn to the conditioner at any convenient point. Such an arrangement may reduce air currents near the floor and permit more even distribution of conditioned air.

# BANK SAVES MONEY WITH HEAT PUMPS

**A** SAVINGS of more than \$3,000 in installation costs and \$200 a year in operating costs despite the addition of air conditioning has been realized in the newly renovated building of First Federal Savings & Loan Association, Marion, Ind., with the use of two

electric heat pumps sold, installed and serviced by local air conditioning firms.

The 5-ton capacity air-to-air units are installed on the second floor of the 4,400-sq. ft. building and change its 39,460 cu. ft. of air more than seven times an hour.

Cost of operation is estimated at \$700 a year, compared to \$900 for the building's former system providing only heat. The complete installation cost was \$10,000, compared to an estimated \$13,000 it would have cost for comparable equipment using other fuel sources.

Temperature control is obtained in the First Federal building by having each of the two heat pumps with separate thermostats serve a floor, and including the partial basement area in the first floor distribution system.

"Not only are we saving money with the use of these heat pumps," said George E. Hayes, president of First Federal, "but we believe we are providing a cleaner and more healthful atmosphere for our customers and employees.

"We are also saving valuable space in our building, since each unit occupies less than 10 sq. ft. and we have eliminated the need for fuel storage. We are able to close our windows to keep out dirt, and this also eliminates outside noise and allows us to better utilize our office space. Heavy filters further reduce dirt, and we anticipate less need for interior remodeling and redecorating.

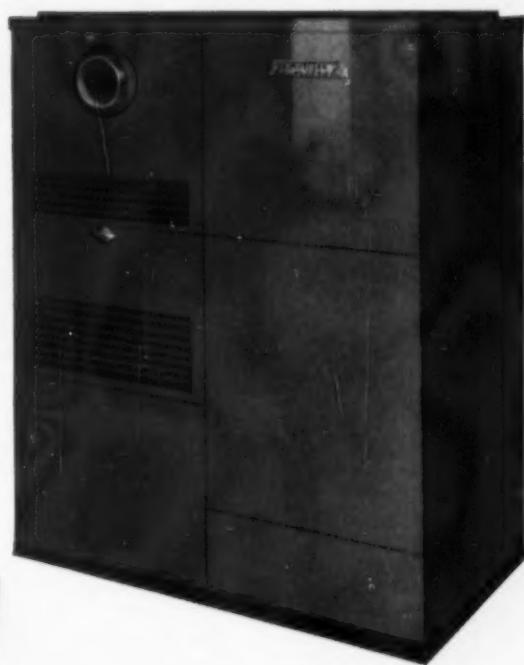
According to Charles H. Marks, district commercial and industrial sales supervisor of the Indiana & Michigan Electric Co., whose firm designed and engineered the installation of the heat pumps for First Federal's architect, other advantages of the machines include: Elimination of the need for water in their operation, less maintenance costs and a provision for up to 20% fresh air in the building during each cycle.

The architect for First Federal's remodeling program was Fairman & Sons, Logansport, Ind. Consulting engineer was Monical & Wolverton, Indianapolis. Moorehead Electric Co. of Marion, Westinghouse air conditioning distributor, sold the heat pumps, while Liniger & Co. was the installing contractor and Marion Refrigeration Services was the dealer's equipment servicing agent. Paul Greiner of Indiana & Michigan Electric Co. was the air conditioning specialist.



**LOWER COSTS** in both installation and operation are two of the benefits expected from the use of heat pump equipment in First Federal Savings & Loan Assn.'s newly renovated building. Roger M. Kane, service engineer, inspects one of the units in the building.

## Get in on the home building boom with year 'round air conditioning!



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**THE SIZE IS RIGHT!** Choice of 2 or 3 hp cooling. Heating is 110,000 Btu input with gas or oil. Unit is 60 $\frac{1}{4}$ " high, 47 $\frac{1}{2}$ " wide, 28 $\frac{1}{2}$ " deep. Cooling may be ordered less the high side for air cooled applications. Installation is easy.

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# Mueller Climatrol

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Circle No. 80 on Reader Service Card

# HOW TO SAVE FLOOR SPACE

## *in food store air conditioning*

ALL retail food markets, from the smallest corner delicatessen to the largest supermarket, have one problem in common—lack of adequate floor space. No

matter how large the store, there always seems to be more merchandise to display and stock than there is room to put it.

Consequently, while most mod-

ern food store operators recognize the vital need for air conditioning, they approach the purchase of this equipment warily, fearful of the amount of otherwise usable space it may require. For this reason, the air conditioning dealer who can offer a practical solution to this dilemma is apt to have the inside track when it comes to making the sale.

Ceiling mounted package units provide one effective means of surmounting this troublesome sales obstacle.

### **No Floor Space Needed**

A case in point is the new H. G. Hill Supermarket in the Belmont Shopping Center of Baton Rouge, La. Here a 35-ton air conditioning system was installed without sacrificing a single square foot of floor space. The answer: four 7½-ton and one 5-ton water-cooled horizontal General Electric air conditioners, ceiling mounted in the storage area with air distributed at ceiling height throughout the sales area by means of a system of concealed ducts and wall outlets.

Total area of this new market is 16,300 sq. ft., of which 10,300



**CEILING MOUNTED** horizontal package units made it possible to air condition this Louisiana food market without losing one valuable foot of floor space. Installed in the utility area at the rear of the store, these units do not interfere even with high-stacked stock.



**CONDITIONED AIR** is distributed throughout the merchandising area by means of two long ducts running the full length of the sales floor at each side of the building. One of these ducts can be seen against the far wall of the market.

sq. ft. is contained in the main sales area. The 6000-sq. ft. storage and processing area runs across the full width of the store at the rear.

One long duct runs down the full length of the sales floor at either side, furred in at the junction of wall and ceiling. Side-wall grilles are spaced evenly in each of these ducts to achieve uniform distribution of conditioned air through the entire merchandising area. Two of the 7½-ton units are hooked up together in the warehouse room at the rear of the store so as to feed into one of the ducts, while the other two 7½-ton units are paired in a similar manner to feed into the other duct.

#### Cooling for Processing

The 5-ton unit supplies the necessary air conditioning for the processing rooms.

All five of these units, being suspended from the ceiling, are far enough off the floor so that they do not interfere even with high-stacked stock.

Installation of this equipment was made by Residential Heating & Cooling, the GE commercial air conditioning distributor in Baton Rouge, with the cooperation of W. F. Sancho, GE sales representative in the area, who makes his headquarters in New Orleans.

#### 45-Minute Installation

All five of the units were raised manually with scaffolds. So simple were the mechanical problems involved that it took only 45 minutes to put each unit in position.

In addition to the benefits offered by the savings in space, W. S. Penick, president of H. G. Hill Stores, reports himself pleased with the new installation on two other counts. In the first place, the use of packaged units made possible conditioning the store with only 35 tons of cooling capacity, whereas a 50-ton central station system would have been required to do the same job. Secondly, the ease of installation of the package units meant a minimum disruption of the store's normal operations.

**ELECTRONIC "BRAIN".** on which any house in the world and any kind of weather can be duplicated, is discussed by Dr. Preston McNall, left, who supervised construction of the complex instrument, and Dr. Finn Larsen, Minneapolis-Honeywell's director of research.



## How a "Weather Factory" Works

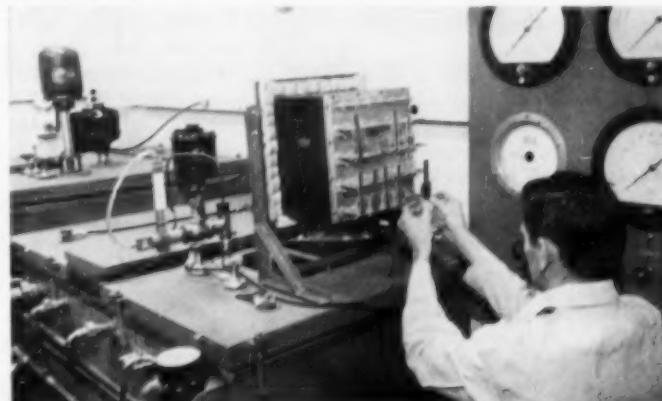
**A**n electronic "brain" that thinks it's a house and analyzes its reactions to any kind of weather is helping scientists engaged in heat transfer studies at Minneapolis-Honeywell's research center in Hopkins, Minn., to cut five years from the time now required to test heating and air conditioning equipment and building materials.

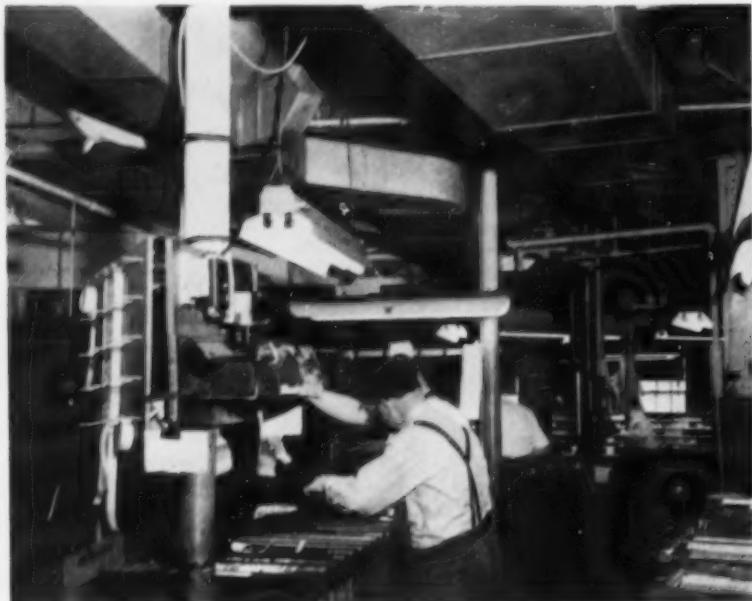
To analytically simulate both the house and the weather around it, the computer is fed such information as construction details on size and type of doors and windows, areas involved, type of outside material, and insulation. The device then surrounds the house with any kind of weather and can, if desired, simulate its complete life span in a matter of minutes. New electronic developments enable the "brain" to repeat the same weather conditions every day of a 60-day simulated period in only one second of actual time—a time factor of approximately 5,000,000 to 1.

The analog is but one of many laboratory aides used by the heat transfer group to gain more knowledge of the effect of external heating and cooling on the human body and the effect of heat on controls, motors, actuators, computers and other mechanical and electrical devices. Another useful adjunct to the heat transfer research program is a new environmental chamber in which air temperatures can be maintained from 0 to 150 F, mean radiant temperatures from 0 to 150 F, air velocities from 0 to 150 feet per second and relative hu-

*Continued on page 123*

**ATMOSPHERE CHAMBER.** in which virtually any weather condition can be created, is used by company's research scientists to test experimental humidity detecting elements.





**PROPER PLANNING** of ductwork played an important part in the air conditioning of the Taunton Gazette plant. Dual ducts serving the newspaper's composing room are shown at left. Business offices are served by a separate system through ducts shown above.

## COOL PLANT for Hot News

**I**N addition to increased employee efficiency, air conditioning in a newspaper plant provides:

Fewer shutdowns owing to web breaks or ink "burning". Maintenance of optimum temperature and humidity conditions assures retention of paper strength and inking characteristics, of critical importance in the operation of today's high-speed presses.

Reduced maintenance. The elimination of dust results in less machinery wear and consequent longer operating periods without need for service.

The air conditioning installation in the four-story building of the *Taunton Gazette*, Taunton, Mass., a newspaper in a community of about 40,000, has worked out so satisfactorily that the owner and publisher says he can't understand why only about 15 daily news-

papers in the country are completely air conditioned.

Individual packaged air conditioning units were installed in the different departments, to allow satisfactory relative humidities and control of temperatures.

A total of 10 packaged units is employed in the complete system, which has a capacity of 85 tons.

According to Lionel L. Patenaude, sales engineer for L. C. Anderson, Inc., Boston G-E distributor, who worked with Russell Myers, of Myers Plumbing and Air Conditioning Co., of Taunton, in designing and laying out the air conditioning system, individual packaged units were chosen as the best answer to the wide variation in heat loads, the need to prevent spread of fumes, and other considerations that existed in the different departments.

In the linotype and stereotype

rooms, design conditions called for 75 F dry bulb indoors at 90 F dry bulb outdoor temperature, or 80 F dry bulb indoors at 95 F dry bulb outside. Relative humidity was set at 50% indoors with the outdoor wet bulb temperature reading 72 F.

In this department, the air conditioning system is operated in conjunction with a ventilating system which provides approximately 25 air changes per hour, and not more than a 25 F drop across the cooling coil.

The addition of air conditioning to the existing ventilating system, Patenaude reports, takes care of an unusually high heat load caused by the melting of the "pigs" of type metal used in the linotype machines. Also, in the stereotyping process, the molten lead used in the process gives off lead oxide

*Continued on page 124*

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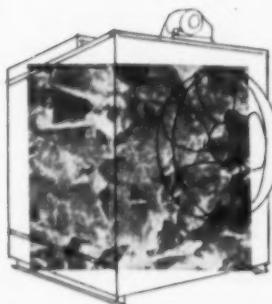
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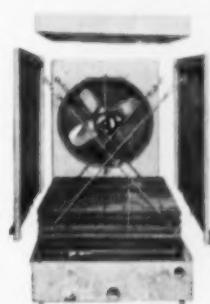
**HOT-DIP GALVANIZING**  
for Longer Life

All metal parts on Dover cooling towers are hot-dip galvanized *after* fabrication. This heavy zinc coating eliminates costly rust and corrosion problems. You pay nothing extra for this rugged finish — standard on all Dover towers.



**STAINLESS STEEL FANS**  
Stop Fan Failures

Every Dover horizontal induced draft cooling tower (Series CF) is equipped with a stainless steel propeller fan and shaft. The savings in maintenance alone, with this distinctive Dover feature, makes Dover the most economical tower you can buy.



**"TAKE-APART" FEATURE**  
Enables Installation In Hard-to-Reach Spots

Basement or other "hard to get at" locations are no longer a problem! By virtual elimination of bolts, all Dover towers can be taken apart rapidly and reassembled right on the job site. Unique design, using adjustable tie-rods, makes this possible.

**DOVER . . . AMERICA'S NEW STANDARD FOR PACKAGED COOLING TOWERS**

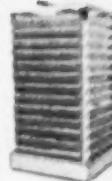
**WHATEVER YOUR COOLING TOWER NEEDS . . . THE ANSWER IS DOVER**



**Series V**  
VERTICAL INDUCED  
DRAFT TOWER  
with centrifugal blower. Ideal for those installations where space is a factor. Piping is held to a minimum. Super-quiet in operation. Sizes from 3 to 100 tons.



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HORIZONTAL INDUCED  
DRAFT TOWER  
with propeller fan. Neat design, rugged construction, efficient operation. Ideal for small air conditioning and refrigeration installations and for jacket water or compressor cooling. From 2 to 100 tons.



**Series K—All Steel**  
**Series S—Steel & Redwood**  
NATURAL DRAFT TOWERS  
available in either all-steel construction which meets municipal fire codes, or the somewhat lower-priced combination steel basins and crowns with redwood posts and louvers. From 3 to 100 tons. Both have Dover bolt-free construction.

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PUSHBUTTON  
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*Pays for  
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time saved  
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The Model 60 Anemotherm Air Meter, developed by the Anemostat Corporation of America, gives you—in one convenient instrument—a simple, rapid method of balancing and checking any air system. It puts at your fingertips, by means of color-coded pushbuttons—

## Air Velocity

Measures air velocities from 10 to 8,000 fpm, in increments as small as 5 fpm—a wider velocity range than ever offered before. It is essentially non-directional.

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Provides rapid-response measurement of temperatures from 0 to 255°F. Temperatures can be read with an accuracy of one-half of one degree.

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Measures static pressures directly in terms of inches of water, from 0" to 10" wg, positive or negative, with a sensitivity of better than .05" at lower range.

*The new Anemotherm Air Meter saves time and money. Write for Bulletin 55 giving all essential data.*



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Circle No. 82 on Reader Service Card

104

## USEFUL LITERATURE On Air Conditioning

To obtain the information described below, simply circle on the postcard in this issue the key numbers of the items you wish to receive. We will forward your requests to the companies concerned.

**CENTRIFUGAL PUMPS** for air conditioning applications are described in a 4 page bulletin (F-639) recently issued by Sta-Rite Products Inc. The bulletin gives construction features of the pumps, shows some of their applications in air conditioning, and includes dimensions, capacities, and brief installation and operations data. An illustrated listing of repair parts also is included.

Circle No. 149 on Reader Service Card

**TWO NEW BULLETINS** on air conditioning and heating coils are available from Peerless of America, Inc. The first, Bulletin AC155, describes the Hi-F "4-row" air conditioning coils series 4-R. The bulletin gives material and construction specifications, dimensional specifications and installation mounting position data. The second bulletin, CX155, covers Conceal-X cooling and heating coils using the Hi-F coils, gives material and construction specifications, capacities and dimensions.

Circle No. 150 on Reader Service Card

**THE MANY VIRTUES** of copper, brass and aluminum as building materials for the home are presented in a 30-page booklet entitled "Building to Endure with Revere" which has been released by Revere Copper and Brass, Inc. Written for architects, builders, contractors, and others in addition to home owners, the publication is illustrated with photographs and simplified detailed drawings of specific applications.

Circle No. 151 on Reader Service Card

**ALL INFORMATION NEEDED** for specifications writing is contained in a new condensed catalog released by the Multi-Vent Div. of Pyle-National Co. The catalog is divided into five main parts: construction and installation details, performance data, sound level charts, complete description of modular and unitary air diffusers, and complete list of representatives and agents.

Circle No. 152 on Reader Service Card

**HEAT FLOW PROBLEMS** in connection with both summer and winter comfort are discussed in a 48-page manual entitled "Heat Flow by Radiation in Buildings" issued by Infra Insulation, Inc. Divided into three sections, the manual covers simplified physics of heat flow, installation techniques, and typical projects. Intended as a technical guide for builders, engineers and architects, but written so that the layman can understand it.

Circle No. 153 on Reader Service Card

**PACKAGED COOLING** and heating equipment for both commercial and residential users is described in a new 12-page booklet (C-1100-B65) recently issued by Worthington Corp. The booklet describes various packaged units in the Worthington line including both summer cooling and year-round units. Also described are the company's line of air cooled equipment, and the new Flexi-cool line for home and business. Available are specification sheets for year-round oil-fired furnaces, C-1100-S103 and air cooled condensers, air-cooled and water-cooled condensing units.

Circle No. 154 on Reader Service Card

**LITHIUM CARBONATE** and its applications to air conditioning and certain other industries is described in a technical bulletin recently issued by American Potash & Chemical Corp. Included in the bulletin is information on chemical analysis, solubility in water at various temperatures and suggested uses. Circle No. 155 on Reader Service Card

**LOW-COST METHOD** of air conditioning school rooms is described in a new bulletin "Amervent Cooling, Heating, Ventilating and Air Conditioning," available from Herman Nelson Unit Ventilator Products, American Air Filter Co. The bulletin describes the design areas, lists models, and describes operating features. It also gives data on unit selection. Circle No. 156 on Reader Service Card

**DEVELOPMENT AND USE** of self-contained central air conditioning are covered in a new 36-page booklet just published by United States Air Conditioning Corp. called "Why RK?" It discusses the evolution of present-day techniques culminating in the RK unit. Treatment of a typical building with built-up RK systems is also shown. Additional diagrams show application of these units to 12 different types of businesses. Circle No. 157 on Reader Service Card

**THE RECENTLY DEVELOPED** "Pushbutton" Anemotherm Air Meter is described in a bulletin (No. 55) announced by the Anemostat Corp. of America. The bulletin explains the operation of the Anemotherm and describes typical uses for it in various types of systems. A number of photographs illustrate the time-saving and precision control features of the unit, and outline operating procedures. Circle No. 158 on Reader Service Card

**CAPACITIES AND DIMENSIONS** of its "Homeaire" conditioner Models SAC-15, 20, and ACR-15, 20 are given in literature available from York-Shipley, Inc. The literature describes the different sizes of units available, and gives engineering features of both the self-contained and the packaged remote type. Circle No. 159 on Reader Service Card

**ACTIVATED CARBON** air recovery panels for removal of odors and vaporous impurities from the circulated air and comfort air conditioning installations are described in a new bulletin (106-D) available from Connor Engineering Corp. Performance and selection charts are included. Circle No. 160 on Reader Service Card

**THE PROFIT SIDE** of air conditioning is described in a new 8 page booklet (L-241) available from Airtemp Division of Chrysler Corp. The booklet contains full information (including unit specifications) on Airtemp's completely redesigned line of commercial water-cooled packaged air conditioners. One page also contains several suggestions as to how units can be installed to save space in various types of business areas. Circle No. 161 on Reader Service Card

**GOLDEN VALUES IN** air conditioning is the title of a new four-page brochure available from American Coils Co. The brochure describes ACI air conditioners which are available in sizes of 3 tons through 15 tons, and gives key specifications. Circle No. 162 on Reader Service Card

**SCIENTIFIC MOISTURE CONTROL** with Dryomatic dry conditioners is outlined in a series of sheets available from Dryomatic Corp. One sheet describes the Model 25CT, another Model T-150, and a third Model 100 dehumidifier units. All sheets give construction details and specifications data. Circle No. 163 on Reader Service Card

(Turn to page 62 for more Useful Literature)

## GET... LITTLE GIANT PRODUCTS FOR TROUBLE-FREE SERVICE!



### LITTLE GIANT SUBMERSIBLE PUMP

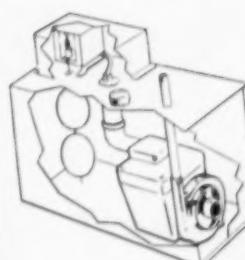
Little Giant Hermetically Sealed-in-oil pumps need no added lubrication — operate completely submerged if desired. Are exceptionally free from interruption in service. HAVE A WIDE VARIETY ON USES where small size and high volume are required. Available in 3 sizes — JUST RIGHT FOR—

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95% of Air Conditioning needs. Condensate removal. Sump drainage. Greenhouse moisture control. Coolant circulation at machine work. Aeration functions (Aquariums, live bait tanks). Milk cooling. Beverage dispensing and other liquids. Many other recirculating & Agitating operations.

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Ideal for mechanical refrigeration installations; performs a necessary service whenever condensate must be drained. The pump is the dependable Little Giant fully submersible type perfectly controlled by the cycling of a positive action electric switch and float.

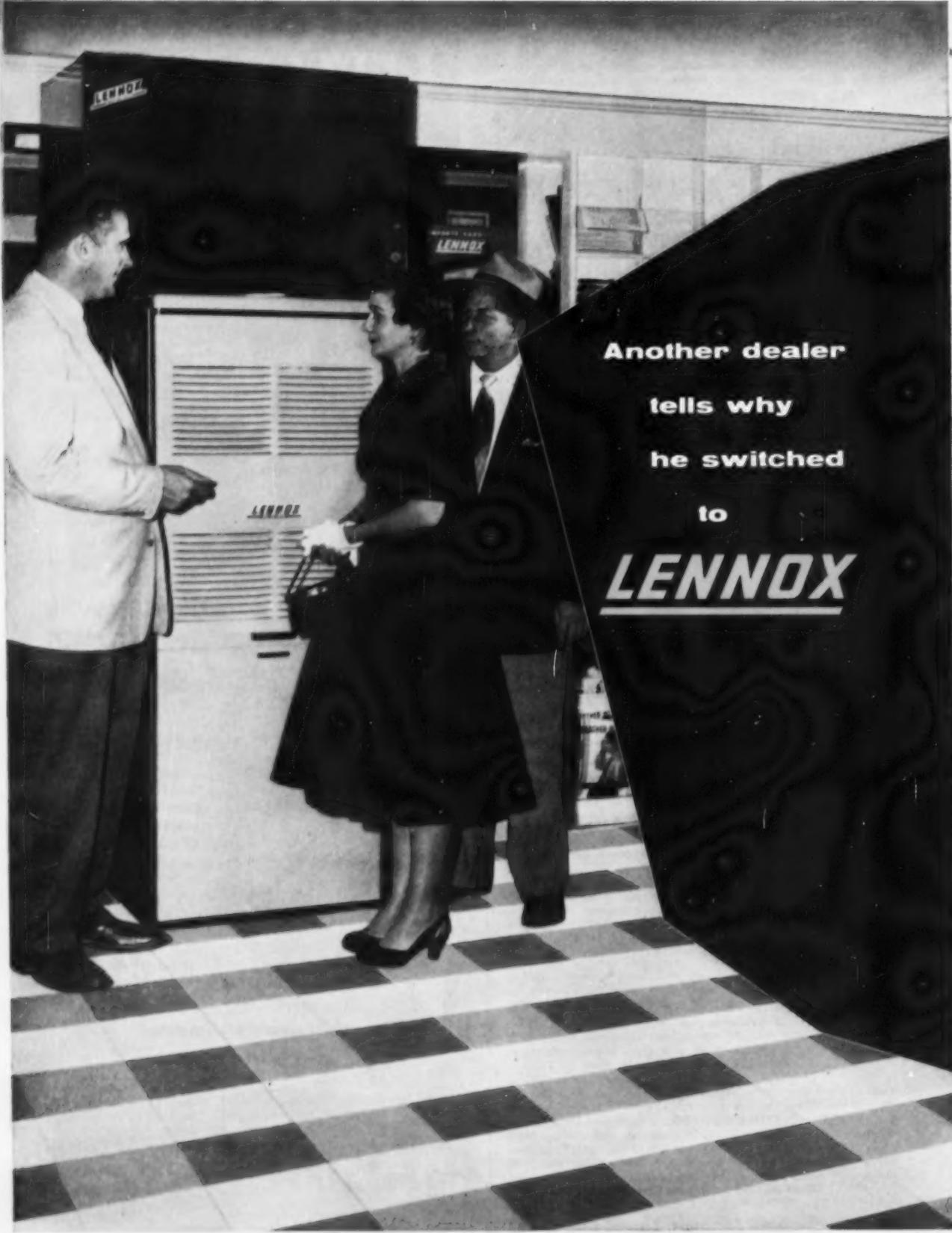
- Small and compact . . . quiet operating
- Coated to prevent corrosion
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- Available in 3 sizes

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## *Air Conditioning is More Profitable to Handle"*

**...says Herb Kay of Waco, Texas**

"I checked all the leading lines before I made the switch to Lennox. So I knew I was getting just what I wanted in top-quality heating and air conditioning equipment, with greater profit opportunities. But I got even more than I dared hope for! Service is always same-day or next-day at the latest. The Lennox air conditioners are completely packaged; my men install them faster and never have to run back to the shop for missing parts. Better yet—a Lennox installation seldom needs warranty service calls. That actually puts *net* profits in the bank—quick! Since half of my \$450,000 annual sales are in air conditioning, it's vitally important to me to have a full line that's easiest to install and requires the least amount of service. Believe me—that means Lennox!"

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# WHAT'S NEW

## in Air Conditioning Equipment

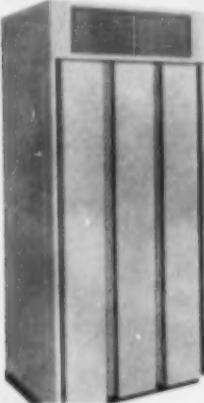
For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

(For more New Products turn to page 66)

### Colored Air Conditioners

**Product:** Packaged air conditioning unit for commercial and residential use in pastel color combinations.

**Manufacturer:** Refrigeration Div., Curtis Mfg. Co., St. Louis, Mo.



**Features:** Packaged units are made in capacities from 3 through 20 tons. They come in combinations of Dusty Pink, French Gray, Fir-mist, Colony Blue, Sandalwood, and Pottery Blue. User may combine any two of colors.

Circle No. 126 on Reader Service Card

### Room Air Conditioner

**Product:** "Royal Aire Jr." room air conditioner.

**Manufacturer:** Union Asbestos



& Rubber Co., Heating & Cooling Div., Chicago, Ill.

**Features:** Air discharge is now

located at front; push-button controls are behind hidden panel. May be operated either as air circulator or as cooling unit. Unit measures 29" high, 19" wide, 18" deep. Rolls on rubber composition wheels and can be moved from one room to another. Unit is water-cooled but does not require permanent fittings. Water can be drawn from household tap through  $\frac{3}{8}$ " flexible rubber tube. Maximum air flow capacity 370 cfm.

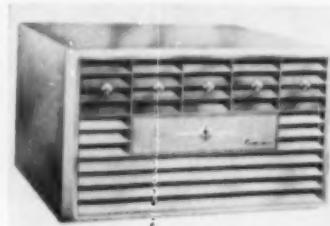
Circle No. 126 on Reader Service Card

### Room Air Conditioner

**Product:** "Electronic Germ-Killer" room air conditioner.

**Manufacturer:** Emerson Radio & Phonograph Corp., Jersey City, N. J.

**Features:** Unit adds germ-killer characteristics to usual cooling and ventilating functions, company says. New device is said by an independent



testing laboratory to destroy 99.6% of airborne bacteria in average-sized room within 10 minutes. Can be used in any location, but particularly useful in sick rooms, nurseries and hospitals. Unit can be operated during all four seasons by itself or in conjunction with cooling or ventilating. Circle No. 127 on Reader Service Card

### Expanded Packaged Line

**Product:** New line of packaged air conditioning units using either chilled-liquid or direct-expansion cooling coils.

**Manufacturer:** Coleman Co., Wichita, Kan.

**Features:** Both liquid-chiller and direct-expansion models available in  $1\frac{1}{4}$ , 3, and 5 hp sizes. New units include company's exclusive "Air-Mist" condenser of wet-bulb type. Air is

brought in through grilles in base of unit. Fine water spray is mixed with air, reducing temperature as much as 40 F, company says. Air-water mixture is fan-forced over entire surface of condensing coil, reducing operating pressure. Water not evaporated



on contact with coil is returned to reservoir for reuse. Water consumption is about three gallons per ton-hour. Dimensions of  $1\frac{1}{4}$  and 3 hp models of both types are length  $51\frac{1}{2}$ ", width 29", height 50 $\frac{1}{2}$ ". The 5 hp models are  $57\frac{1}{2}$ " long, 29" wide and 51 $\frac{1}{2}$ " high.

Circle No. 128 on Reader Service Card

### Packaged Air Conditioners

**Product:** Completely restyled line of packaged air conditioners.

**Manufacturer:** Airtemp Div., Chrysler Corp., Dayton, Ohio.



**Features:** Entire Airtemp 1956 line of water-cooled and waterless "packaged" air conditioners has been redesigned. New "Forward Look" design has been adopted to achieve distinctiveness through simplicity of modernistic, functional styling. Finished in neutral spatter gray enamel, all self-contained units in line will now be available in these cabinets. Line ranges in sizes from 2 hp to 30 hp.

Circle No. 129 on Reader Service Card

### Mobile Home Conditioner

**Product:** Floor-mounted air conditioner for mobile homes.

**Manufacturer:** Carrier Corp., Syracuse, N. Y.

**Features:** New 1956 model fea-

tures two-tone color styling especially suited to birch interiors of many trailers. Incorporates completely automatic operation. Available in  $\frac{3}{4}$  hp model. Unit occupies only a little more than 2 sq. ft. of floor space and



stands just 28" high. Designed to fit alongside sofa or bed where its flat top doubles as end table or nightstand. Permanent aluminum filter. Unit draws condensing air through bottom, instead of back as in conventional units. Can be installed by cutting small hole in trailer floor and placing unit over this hole and connecting to standard 115 or 220 volt circuit. Two-knob control on front of unit at top can be reached without stooping or crouching. Air louvers are adjustable to provide wide variety of air-flow patterns.

Circle No. 130 on Reader Service Card

### Winter Conditioner

**Product:** Counter-flow year round conditioning unit with matching compartment for summer cooling coil.

**Manufacturer:** Janitrol Heating & Air Conditioning Div., Surface Combustion Corp., Columbus, Ohio.

**Features:** New unit, known as Model FDSC, has gas-fired heating section. Matching compartment for summer cooling evaporation coil is available as an accessory. Cooling assembly may be included in original installation, or added at any later date. New models available in 80,000, 100,000 and 120,000 Btu heating inputs. Cooling section, which also serves as a base for the unit, is only 16" high. Air-cooled compressor-condenser unit is remote type, for installation outside house.

Circle No. 131 on Reader Service Card

Evaporator built to match performance of condenser. Blower section on 2 and 3-ton models can be installed



above or below cooling unit for upflow or downflow operation in any of 30 air flow variations. 5-ton unit has blower permanently-mounted in upflow position. Refrigerant lines have quick disconnect fittings.

Circle No. 132 on Reader Service Card

### Residential Conditioners

**Product:** New line of air-cooled residential waterless air conditioners, with remote condensers.

**Manufacturer:** Perfection Industries Div., Hupp Corp., Cleveland, Ohio.

**Features:** Units are available in 2, 3, and 5-ton capacities. Condenser features special coil arrangement that sub-cools refrigerant for increased efficiency and greater capacity.

### Air Conditioning Line

**Product:** Completely redesigned line of air conditioning equipment, air cooled and water cooled models.

**Manufacturer:** Shana Mfg., Inc., Chicago, Ill.

**Features:** Units available as either water cooled or air cooled type, in both self-contained and remote type model. Features include a new "Modulator", an automatic device for anticipation of tempera-

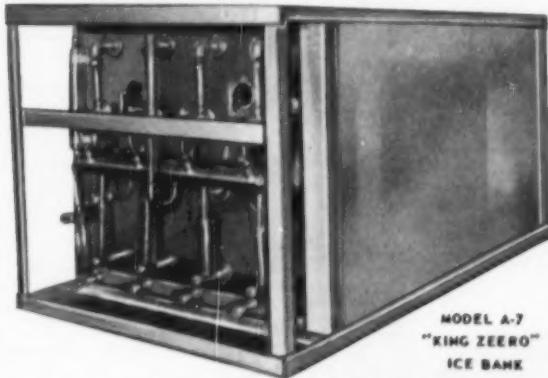
## "King Zeero's" Sweet Water **ICE BANKS** offer ICE-CONCENTRATED Refrigeration for Air Conditioning

CONTINUOUS RIFLED GALVANIZED COILS  
EXPANSION VALVE CONTROLLED

**32° - 34° COLD  
ICE WATER**

DESIGNED FOR USE WITH:  
FREON — METHYL CHLORIDE — AMMONIA

The "King Zeero" ICE BANK is designed for air cooling in Churches, Mortuaries, Theatres, Offices, Stores, Auditoriums, Factories, Clubs, Restaurants, etc. Ice Banks may be added to existing systems for increased capacity.



CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

**THE KING ZEERO COMPANY**

4300-14 W. Montrose Ave., Chicago 41, Ill.



Circle No. 85 on Reader Service Card

& AIR CONDITIONING • FEBRUARY, 1956

The "King Zeero" ICE BANK is designed to deliver tons of 32 to 34 F. ice water for recirculation through air cooling coils. Peak loads many times compressor capacity are easily handled.

- DIRECTED COURSE OF WATER travels with "built-in" agitation.
- NO MECHANICAL AGITATION REQUIRED.
- LARGE WATER COMPARTMENTS spaced on 11" and 12" centers.
- 33% EXTRA ICE CAPACITY safely attained without freezing up.
- ICE IS "BURNED OFF" PLATE COILS progressively, exposing prime and secondary surface for maximum flash cooling capacity.
- ICE THICKNESS automatically controlled - eliminates "freeze ups."
- 94 SIZES to fit space requirements. Other designs for special applications. **MAIL COUPON TODAY**

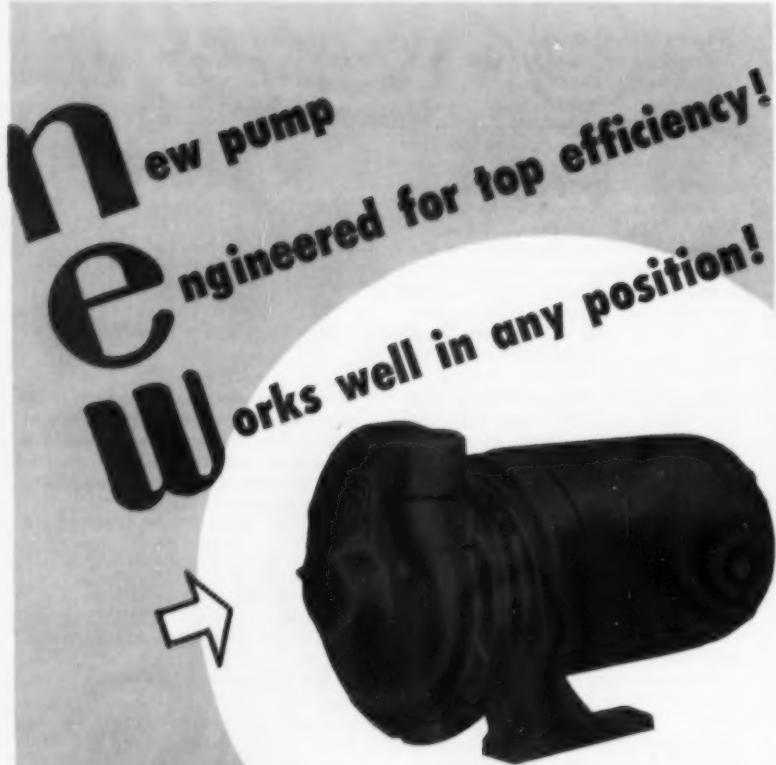
King Zeero Co., 4302 W. Montrose Ave., Chicago 41, Ill.

Please send me your new ICE BANK Catalog.

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Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



**IT'S THE NEW INGERSOLL-RAND  
MOTORPUMP  
FOR AIR CONDITIONING**

Air conditioning systems are most dependable when you've specified this new  $1\frac{1}{4}$  KRVSA MOTORPUMP—now available in 1,  $1\frac{1}{2}$ , 2, 3 horsepower sizes!

- More compact—saves space.
- More efficient operation lowers costs.
- I-R advanced engineering and modern construction makes them even more dependable.

Ingersoll-Rand MOTORPUMPS are also ideal for other liquid handling jobs. Latest I-R MOTORPUMP bulletin describes the full line from  $\frac{1}{4}$  through 75 horsepower. Write for one today.

**Ingersoll-Rand**

11 Broadway, New York 4, N. Y.

Circle No. 86 on Reader Service Card

ture difference whereby indoor comfort levels can be modulated in response to outdoor temperature fluctuations. Other features include electronic controls, convertible re-



mote evaporators for air-cooled condensers, inverted "V" evaporator for air-cooled condensers, remote condensers with blowers for duct and indoor installations, remote condensing units with propellers for outdoor applications and self-contained air-cooled units for attic or closet installations.

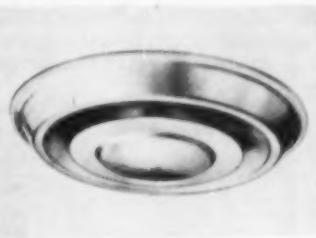
Circle No. 133 on Reader Service Card

**Ceiling Air Diffuser**

**Product:** Restyled residential ceiling air diffuser.

**Manufacturer:** Connor Engineering Corp., Danbury, Conn.

**Features:** Capacity range of "Kno-Draft" units have been increased to more than 750 cfm with



addition of 10 and 12" diffuser, making these units suitable for small stores, offices and larger homes. Installation has been simplified as diffuser collar now fits inside round duct instead of outside as formerly. Sponge rubber gasket provides positive air seal. Complete engineering and selection data for both heating and cooling can be obtained from company.

Circle No. 134 on Reader Service Card

**Portable Psychrometer**

**Product:** "Gemware" portable psychrometer.

**Manufacturer:** G. M. Mfg. Co., New York, N. Y.

**Features:** Designed for use in

accurately obtaining relative humidity measurements in air conditioning and cold storage systems. Instrument functions like standard Weather Bureau sling psychrometer except that air is sucked past thermometer



bulbs instead of whirling instrument in air. Consists of housing with air intake tube connected to special duct system with exhaust slots, high speed precision motor, three standard flashlight batteries for power supply, two matched thermometers, water reservoir and wick connected to wet bulb thermometer, and on-off switch. Standard range is 20 to 120 F in 1° graduations.

Circle No. 135 on Reader Service Card

#### Water Chillers

**Product:** New "Flow-Pac" water chiller line.

**Manufacturer:** Acme Industries, Inc., Jackson, Mich.

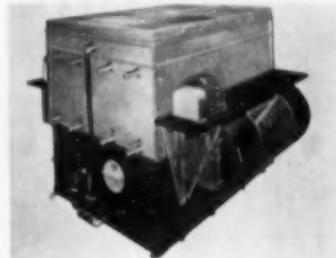
**Features:** In company's "WCW" series with water cooled condensers, Flow-Pac is available in 1/4, 3 and 5 hp sizes with nominal heat transfer ratings of 20,000, 26,000, and 63,000 Btuh respectively. Also offered is a "WCA" series 2, 3, and 5 hp models with air cooled condenser unit for remote mounting. Spring-mounted, precision-made compressor is said to have nearly same low decibel rating

connection to power supply and system's piping.

Circle No. 136 on Reader Service Card

#### Condensers and Towers

**Product:** New Model "MC" line of evaporative condensers and Model "MT" line of cooling towers.



as modern refrigerator. Full insulation, all-copper water connections in chillers unit and sealed refrigerant system are designed for economical trouble-free operation. Units are factory tested and shipped with F-22 charge ready for operation after con-

**Manufacturer:** Baltimore Aircoil Co., Inc., Baltimore, Md.

**Features:** New models offer evaporative condensers up to 350 tons nominal capacity and cooling towers up to 400 tons nominal capacity in single, factory-assembled units. Employing galvanized centrifugal fans, new line of equipment is designed around "blow-through" principle. Sectional construction permits simple rigging and installation. Units are so designed so that increased capacity requirements, due to future plant ex-

## New compactness in air-cooled AIR CONDITIONER design!



Smallest air-cooled, self-contained 5-ton central type unit made.

5 natural wood-grain finishes available on all free-standing models.

Completely automatic, thermostatic controlled, air-cooled condenser. (Water-cooled available on 5-ton).

MODEL RO-575W  
(with air distribution head)



Complete air conditioning for entire home—or equivalent commercial or office area—at the lowest cost in smallest space! GENERAL AIR CONDITIONERS deliver 2, 3 or 5 tons of cooling. All models operate on standard outlet (220 V, single and 3 phase except 2-ton—single phase only).

Attic, roof, outside, or free-standing units

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Offices and warehouses:

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WRITE today for details. Franchise dealerships available.



MODEL RO-525A  
(without air distribution head)

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FIVE YEAR GUARANTEE — easy payment plan

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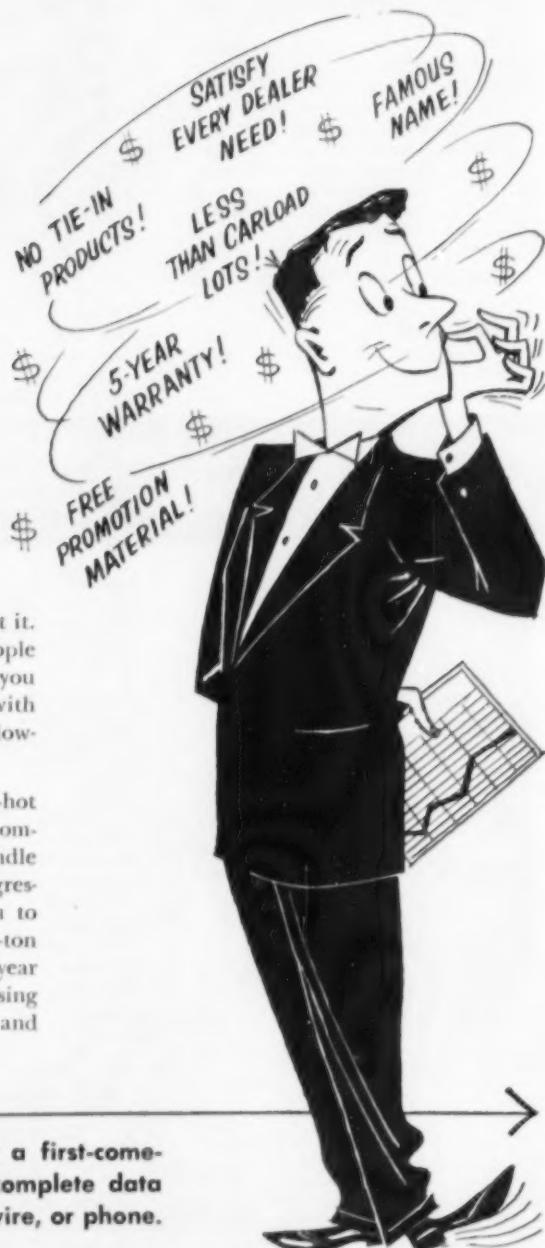
# Look into the low-investment AMERICAN BLOWER Packaged Air Conditioners!

Here's your profit opportunity of a lifetime to wholesale to dealers the finest packaged air conditioners... without being forced to overstock or sell tie-in products!

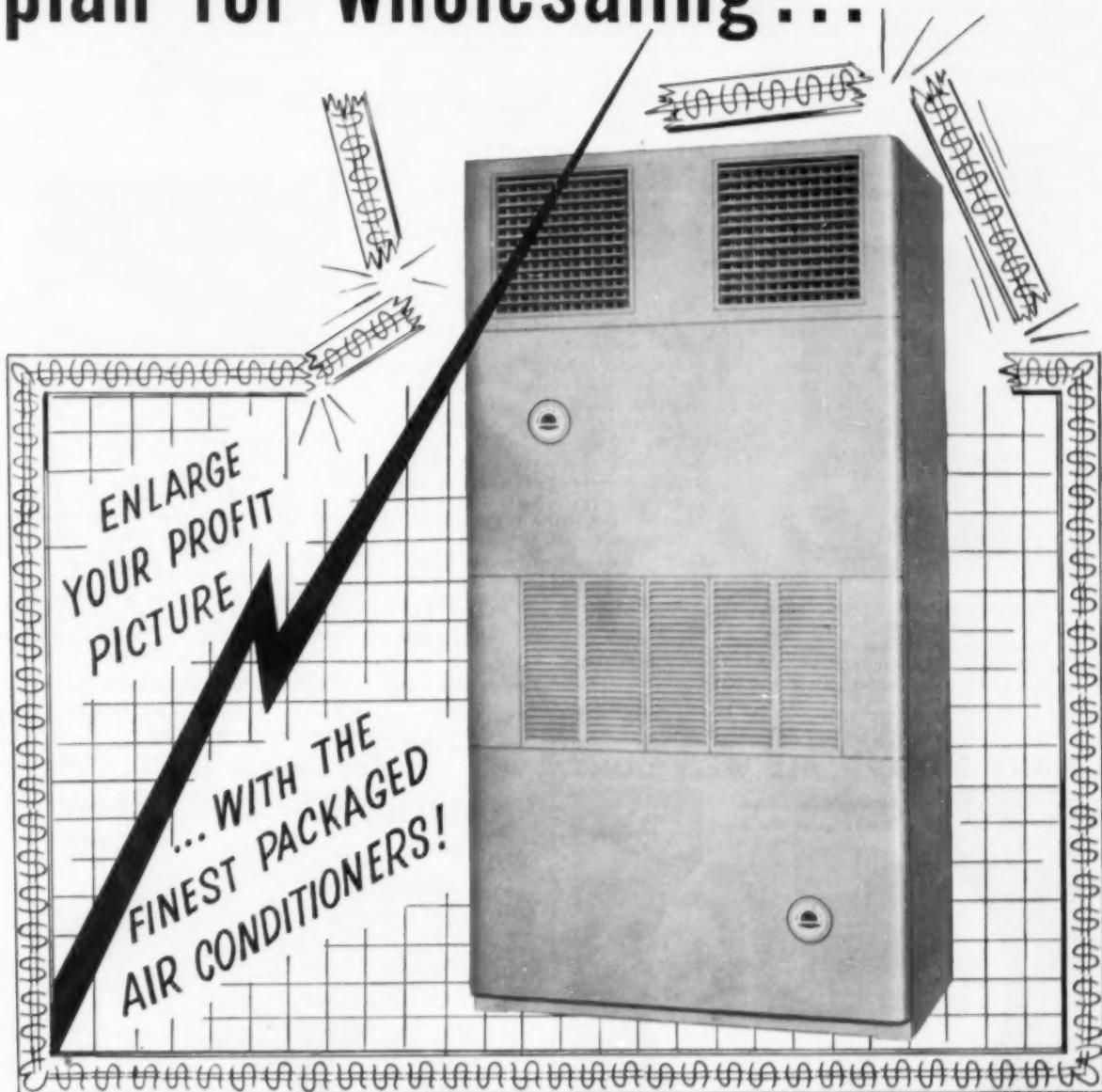
You don't have to sell air conditioning; people already want it. You don't have to sell the American Blower name; people respect it, know it through national advertising. And you don't have to tie up capital in "too much" inventory with American Blower Packaged Air Conditioners . . . for our low-investment plan lets you buy in less-than-carload lots!

As an American Blower wholesaler, you get this red-hot item — that's competitively priced — for a market that's booming, with no end in sight (and you're not required to handle tie-in products!). In addition, you get the backing of an aggressive, growing company — plus these extras that enable you to more than meet competition: (1) units with 3- thru 20-ton capacities to satisfy practically every dealer need; (2) 5-year warranty on entire refrigeration circuit; (3) national advertising support; (4) liberal cooperative plan for local advertising, and free sales promotion material.

**Choice, protected territories are available on a first-come-first-served basis—so mail coupon today for complete data on our stocking plan and franchise—or write, wire, or phone.**



# plan for wholesaling ...



## AMERICAN BLOWER

Packaged Air Conditioners — that cool without chilling  
AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN

Division of AMERICAN-Standard

Yes! I am interested! Please have your representative call.

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Firm \_\_\_\_\_

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Circle No. 88 on Reader Service Card

pansion, can be achieved by installation of additional sections to basic unit as and when required. Company says that use of centrifugal fans and low air charge velocity make new units exceptionally quiet.

Circle No. 137 on Reader Service Card

### Central Air Conditioner

**Product:** New central air conditioning unit for homes with warm air heating ducts.



**Manufacturer:** Gibson Refrigerator Co., Greenville, Mich.

**Features:** Unit has 2 tons capacity, said to be sufficient to cool average five-room house. Cost in-

cluding normal installation is \$695. Replaceable fiber filter removes dust, pollen and bacteria from air. Hermetically sealed compressor unit is spring-mounted for quiet operation and carries five-year warranty. Cabinet finished in grey enamel, measures 45" high, 25" wide and 30" deep. Requires only 5.2 sq. ft. of floor space. Designated as Model GB-21B. Company's complete line includes 17 models of water and air cooled units for commercial or residential use.

Circle No. 138 on Reader Service Card

### Winter Air Conditioner

**Product:** Counterflow type winter air conditioner.

**Manufacturer:** Air Conditioning Div., American Radiator & Standard Sanitary Corp., Elyria, Ohio.

**Features:** Unit is available in 75,000, 100,000, and 125,000 Btuh input ratings. Approved by AGA for 1" clearance installation at sides, zero clearance at rear. Can be operated on combustible flooring if optional sub-base is used. Designated as Model GCA (Gas Counterflow Assembled) this is a fully assembled and wired unit, installation tested at factory. Design permits addition of American-Standard cooling unit for year-round air conditioning.

Circle No. 139 on Reader Service Card

### Room Conditioners

**Product:** 1956 line of room air conditioning units.

**Manufacturer:** Fedders-Quigan Corp., Maspeth, L. I.

**Features:** Leading model is 7 1/2 ampere 3/4 supreme, said to draw only 40% of current of conventional units of same size. Also available in several models is an "Electronic Purifier" an



electrostatic filter which is said to remove up to 300% more dust, pollen and foreign particles from the air than conventional filters. In addition to these units and a 1/2 hp 7.5 amp unit, a number of models utilizing standard ampere circuits are available. In DeLuxe and Custom series there are 3/4, 1, 1 1/2 and 2 hp units. Four casement models in 1/2 and 3/4 size are in production, as well as a 3/4 hp "Lo-Boy" and a heat pump window unit for year-round operation in northern regions.

Circle No. 140 on Reader Service Card

## MANY DUTIES • ALL WELL DONE



A Versatile Performer  
Wherever Liquids are Used



TYPE GGU  
Aurora Side  
Suction Centrifugal Pump

Discharge may be at any of eight positions. Only the pump end need be of special metals to handle corrosives. Combines numerous quality features for extra years of service. Capacities to 1800 G.P.M.; Heads to 190 ft. Write for Bulletin 107-M.



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THE NEW YORK AIR BRAKE COMPANY

21 LOUCKS STREET

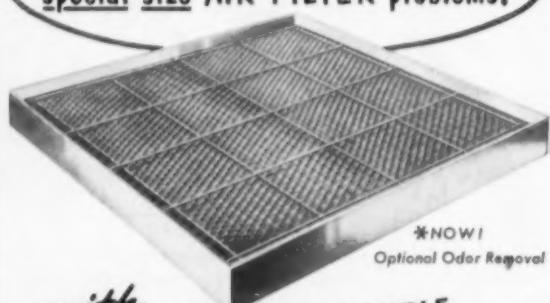
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114

Here's how to end  
special size AIR FILTER problems!



\*NOW!  
Optional Odor Removal

with  
**E Z KLEEN** WASHABLE  
ALUMINUM  
Air Filters

For filter sales or filter service, E Z Kleen aluminum washable air filters for air conditioners fit your profit picture perfectly. They permit a reduced inventory... result in fewer call-backs... require less storage space. With home service by customers, you profit from sale of R P Handi-Koter adhesive or R P Super Handi-Koter, fast-selling, replacement items. Or... you can establish a profitable service business. Whatever your type operation, E Z Kleens are the answer! In  $\frac{1}{2}$ ", 1", or 2" thicknesses.



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FEBRUARY, 1956 • COMMERCIAL REFRIGERATION



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WEEK, BUSINESS WEEK  
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*How to beat Old Debbil Time . . .*

We frustrate Time . . . by forming Lewin-Mathes Seamless Tube and Pipe out of *ageless Copper* . . . heavy-walled and durable . . . smelted to meticulous purity in our own refinery.

We take Time . . . as *integrated specialists*, to test and check and analyze each step in production—from raw material to finished product—to guarantee perfect, *enduring* quality.

We save you Time . . . through a nation-wide network of Service Offices and Mill Depots, linked by Teletype, to assure *on-schedule* deliveries.

The Time you take to specify Lewin-Mathes for your Copper Tube and Pipe applications will be to your *everlasting* credit—and satisfaction!

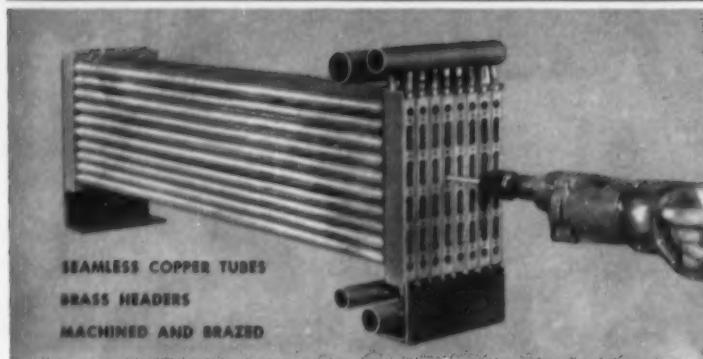
**LEWIN MATHES**  
SAINT LOUIS, MISSOURI  
MANUFACTURERS OF  
COPPER AND BRASS TUBE PIPE AND ROD

# WE KEEP WATER-IMPURITY WORRIES AWAY

... because ...



## this Condenser is CLEANABLE

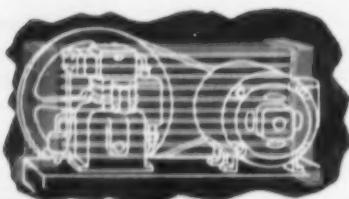


*a cleanable clean condenser* → always high heat-transfer capacity

We make CLEANABLE Condensers to leave you free from the worry that lime or other impurities are coating the inside of your condenser tubes . . . are cutting heat transfer capacity . . . are raising power bills.

Because CLEANABILITY avoids progressive fouling of water tubes, Halstead & Mitchell water-cooled condensers can be designed around the most efficient . . . and most economical . . . area of copper heat transfer surface. Thus your first bonus is in original investment—CLEANABILITY at no extra price.

No matter how severe water conditions may be, a simple mechanical cleaning tool puts a Halstead & Mitchell CLEANABLE Condenser back to operating with new-unit efficiency in a matter of minutes. Thus, your second bonus—long, low-cost, trouble-free life.



Most leading manufacturers have long recognized the need for, and economy of CLEANABILITY in all sizes. It will pay you to take no less!

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HM  
*Halstead & Mitchell*

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WORLD'S LARGEST  
MANUFACTURER OF  
DOUBLE-TUBE,  
COUNTER-FLOW,  
CLEANABLE  
CONDENSERS

1/3 thru 25 TONS

Circle No. 92 on Reader Service Card

FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

### Suspension Coupling

**Product:** "Drive-Thru" coupling for suspension applications.

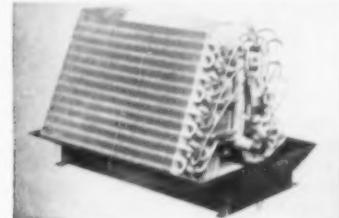
**Manufacturer:** Ramset Fasteners Div., Olin Methiesson Chemical Corp., New York, N. Y.

**Features:** Device replaces conventional threaded stud and coupling in suspension of unit heaters, air conditioners, heating and air conditioning ducts and pipes. It can be used with the  $\frac{1}{4}$ " drive pin only. Unit cost is 4 cents less than that of typical drive pin.

Circle No. 141 on Reader Service Card

### Furnace Bonnet Coil

**Product:** Furnace bonnet air conditioning coil.



**Manufacturer:** Refrigeration Appliances, Inc., Chicago, Ill.

**Features:** Coil converts forced air furnace duct systems to summer cooling systems with minimum in-

stallation problems. Compact V-Bank arrangement of coils, unit is easily included in new systems, easily applied to existing installations, company says. Three models offer 24,000, 36,000, and 60,000 Btu nominal capacities. Tubing is copper electro tin plated, fins are multi-tube type heavy gauge aluminum.

Circle No. 142 on Reader Service Card

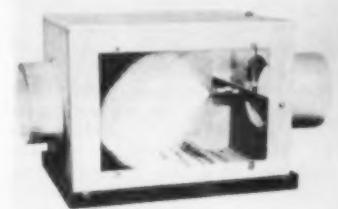
plenums. Humidity control is achieved by use of manually operated damper. This eliminates damper-motor linkage, solenoid valve and humidistat. After being set, humidifier is self-regulating. Continuous operation of spray nozzle minimizes scale build-up. Strainer installed in nozzle traps water sediment before it reaches orifice. Filter is easily reached for cleaning or replacement.

Circle No. 143 on Reader Service Card

### Spray Dehumidifier

**Product:** New high capacity spray dehumidifier.

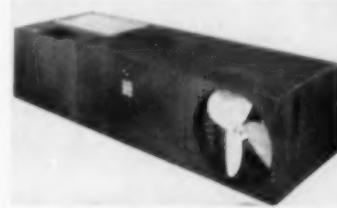
**Manufacturer:** Lennox Industries, Inc., Marshalltown, Iowa.



**Features:** Easily attached to any warm-air furnace, humidifier adds up to eighteen gallons of water per day to the air. Continuous-flow spray is located in a bypass between the warm-air and return-air furnace

### Mobile Cooling Unit

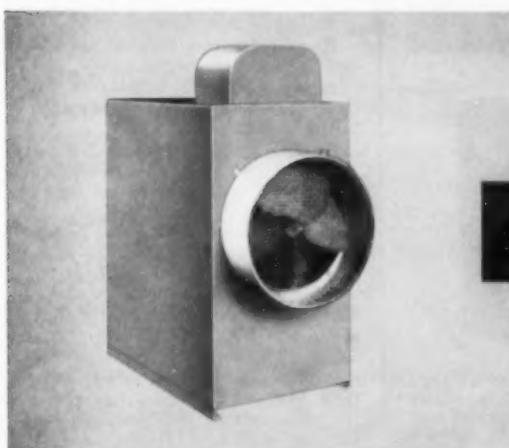
**Product:** New commercial air conditioning units designed for use in



display vans, bookmobiles and mobile stores.

**Manufacturer:** Ellis & Watts Products, Inc., Cincinnati, Ohio.

**Features:** Units are completely self-contained, require only electricity to operate. Built to withstand vibration, acceleration, shock, or other



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The **QUALITY** is high...  
but not the price

in the

**MASTER-BILT**

3-5-7  $\frac{1}{2}$ -10 TON COOLING TOWERS

for Residential and Commercial Air Conditioning Systems

GALVANIZED STEEL resists corrosive atmospheres—lasts longer.

REMOVABLE REDWOOD DECKING provides 25% more evaporative surface than other towers of same capacity.

QUIET FAN, 44° PITCH... propeller-type, V-belt driven, with pivoted motor mounting for easy adjustment of belt tension.

EXTERIOR LUBRICATION FITTINGS

INDOOR-OUTDOOR INSTALLATION

Master-Bilt Refrigeration Mfg. Co.  
920 Palm St., Dept. C, St. Louis 7, Mo.

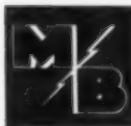
Please send me complete information, including literature, on your low-cost cooling tower.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



**MASTER-BILT**

**REFRIGERATION MFG. CO.**

920 Palm St., Dept. C. • St. Louis 7, Mo.

Circle No. 93 on Reader Service Card

# DUC-PAC

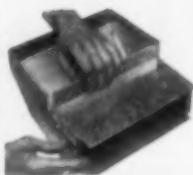


## Prefabricated Fittings

### CUT YOUR COSTS

#### ... on Handling

Duc-Pac unassembled fittings, individually banded and identified, offer space-saving compactness that permits stocking ahead. Duc-Pac fittings PRESS together in seconds . . . eliminate need for any "hammering-over" of edges.



#### ... on Installation

Drive cleat and "S" lock fitting-to-fitting connection saves time



... simplifies installation in hard-to-get-at places . . . generally eliminates any need for special fittings . . . permits one man to hang trunk line.

Write for complete information on Duc-Pac . . . practical pre-fab fittings for all domestic and light commercial heating or air conditioning duct installations.

# DUC-PAC

DIVISION OF SWETT BROS.

78 ISLAND POND ROAD  
SPRINGFIELD • MASSACHUSETTS

Circle No. 94 on Reader Service Card

118

road hazards such as salt spray, mud, sand, stones, etc. Available in capacities of 1 to 20 tons. Two independent cooling systems feature a starting lockout control, to reduce inrush current and eliminate need for large generator. Hermetically sealed refrigeration system is air cooled.

Circle No. 144 on Reader Service Card

### Time Switch

**Product:** "Weather-Chron" weather-actuated time switch for heating systems.

**Manufacturer:** Automatic Devices Co., Inc., Western Springs, Ill.

**Features:** Outdoor temperature



automatically resets time for heating to start in the morning and for cut-back at night. Seven-day programming feature automatically adjusts hours of heating in accordance with the needs of actual building occupancy. Can be used in space heating control circuit of any residential, commercial, or industrial system.

Circle No. 146 on Reader Service Card

### RECTORSEAL No. 2

**NEW**  
but so  
Popular!



Introduced to the industry a few short months ago Rectorseal #2 is already preferred by air conditioning men all over the nation. Reason? Quality! For here's a compound that seals positively against leaks on all freon, methyl chloride, sulfur dioxide, ammonia, all lubricating oils and water.

Thin in the tube, Rectorseal #2 spreads smoothly over fine threads, thickens in the joint to a plastic elasticity that prevents leaks—yet is always easy to break-out. With all this Rectorseal #2 costs from 20% to 40% less than other compounds. Write for a generous FREE SAMPLE and see for yourself.

RECTORSEAL, Dept. Y  
2215 Commerce Street, Houston 2, Texas

**RECTORSEAL**  
NUMBER TWO

Circle No. 95 on Reader Service Card

FEBRUARY, 1956 • COMMERCIAL REFRIGERATION

### Window Unit Line

**Product:** New line of window and room air conditioners.

**Manufacturer:** Remington Air Conditioning Div. of Remington Corp., Auburn, N.Y.

**Features:** Window unit line for 1956 consists of five models ranging from  $\frac{1}{2}$  hp to 2 hp as against seven models from  $\frac{1}{2}$  hp to  $1\frac{1}{2}$  hp in 1955. Pacemaker Series has  $\frac{1}{2}$  and  $\frac{3}{4}$  hp models, both for 115 volts only. Regal Series has  $\frac{3}{4}$ , 1, and 2 hp models. Units of  $\frac{3}{4}$  hp model is for 115 or 220 volts, 50 or 60 cycles; companion 1 hp model is offered for 208 or 230 volts, 60 cycle or 230 volts, 50 cycle current. New 2 hp (230 volt) unit features two speed fan, thermostat, face-mounted adjustable discharge grilles, ventilation, exhaust and "Adjust-O-Mount". "Consolair" units are available in  $\frac{3}{4}$  (115/230 volts) and 1 hp (230 volts) capacities. Either can be converted to 208 volts.

Circle No. 147 on Reader Service Card

### OPEN DALLAS BRANCH

Jacuzzi Bros., Inc., manufacturers of pumps and water systems, has opened a new factory branch in Dallas. The new plant will serve as the firm's operating headquarters for the entire southwest area.

# REMOVE SCALE QUICKLY!

WITH **anco** CONDENSER CLEANER



Scale and rust get the bum's rush when ANCO Condenser Cleaner goes to work. This exclusive formula is simply dissolved in the sump while the system is in operation. Within 2 to 15 hours, depending on the thickness of the scale, the tubes are clean and head pressure is down to normal. This superior cleaner is safe for servicemen to use and harmless to equipment. Don't ask for trouble—ask for Anco Condenser Cleaner.

Keep scale and rust from forming with  
**ANCO WATER TREATMENT**



**FREE!**

**WATER TREATMENT MANUAL**

A complete booklet on the control of scale, rust and algae in refrigeration and air conditioning systems. No service department should be without a copy. It's yours for the asking.

Kill slime and algae with  
**ANCO ALGAECLIDE**



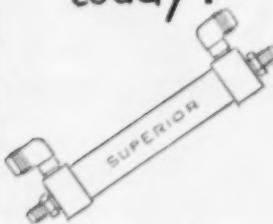
Sold by wholesalers of air conditioning and refrigeration supplies

**Anderson Chemical Company, Inc.**

BOX 1424 • MACON, GEORGIA



making an  
installation  
today?



gear it for  
maximum  
performance

with a  
Heat  
Exchanger

by



**Superior**

valve & fittings co.  
pittsburgh 26, pa.

Circle No. 97 on Reader Service Card

120

### CARRIER, LEVITT SIGN 702-HOME CONTRACT

What is said to be, the largest contract ever awarded for residential air conditioning was jointly announced recently by the community building firm of Levitt & Sons, Inc., and Carrier Corp.

The agreement provides for the installation of 4-ton Carrier air-cooled central air conditioning systems in 702 "Country Clubber" homes to be built in Levittown, Pa. Signing the contract were William J. Levitt, president of the Levitt firm, and Cloud Wampler, chairman and president of Carrier.

Wampler described the contract as the air conditioning industry's "major breakthrough into the volume housing market."

"The Levitt decision to make air conditioning standard equipment will have a profound effect on the entire home building industry," he said. "It may well establish central air conditioning as a 'must' for all volume builders in the future."

Air conditioning will be installed in all "Country Clubber" homes to be built in Levittown, Pa., the nation's biggest planned community. Initial occupancy will begin this spring. The homes are priced at \$18,900.

### DISTRIBUTORS HELPED IN REMINGTON PLAN

As part of its 1956 air conditioner merchandising program, the Air Conditioning Div. of Remington Corp. has developed a new "distributor protection plan" available to both its distributors and to key factory accounts.

Under the three-point program, risk of product obsolescence is virtually eliminated, the company believes, by its policy of "no yearly models". Risk of inventory depreciation through lower prices is assumed jointly by the distributor and Remington from the end of one season to the beginning of the next, on a 50-50 basis.

Additionally, Remington assists the distributor in borrowing substantially against his post-season inventory to unfreeze working capital. This financing assistance is available on a good portion of distributors' 1956 purchases which remain unsold on Oct. 1.



**NEW SAFETY** mechanism to prevent children from being trapped inside refrigerators has been incorporated in Admiral's new line of refrigerators. Known as the "Life Guard", the inside door release opens the refrigerator door at a touch, and glows in the dark.

### IMPERIAL BRASS OPENS DALLAS WAREHOUSE

Opening of new warehousing facilities in Dallas, designed to serve the southwest area on Imperial refrigeration products, has been announced by Imperial Brass Mfg. Co., Chicago. The warehouse is located at 9000 Sovereign Row in the new Brook Hollow industrial district of Dallas.

(Advertisement)



Air Conditioning Manager  
Claims "SUPCO 88"  
an Amazing Discovery

NEW YORK CITY, NEW YORK: Mr. Harry Lipman, Manager of Edison Cooling Systems, Inc., speaks from experience as an Air Conditioning serviceman.

"I heard about 'Supco 88', but I was skeptical about its claims until I saw the results with my own eyes.

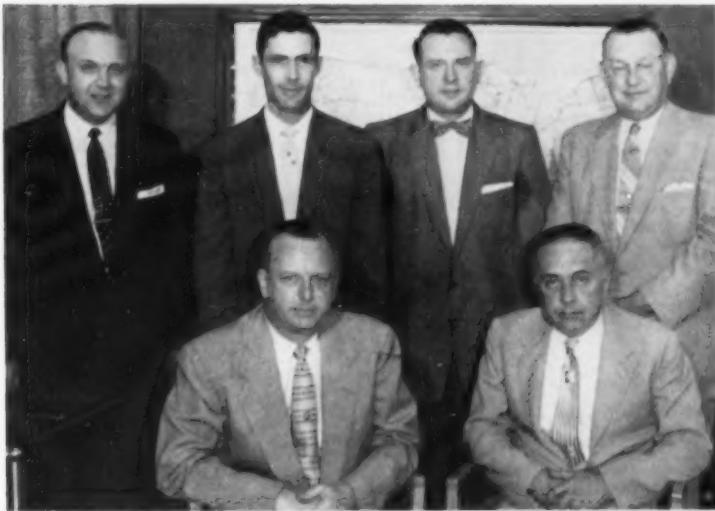
"I'll never forget the job that convinced me. Here was this 25 ton air conditioning compressor shut down because of tight bearings. This happened on a Friday afternoon in the middle of a heat wave. The restaurant owner was frantic since arrangements were made for that evening's banquet. At the suggestion of my top mechanic Maurice, we put in the required 10%—almost two quarts of 'Supco 88' and started the unit.

"Well sir, she's still running and it has the sweetest running sound you ever heard. I sure was convinced and now use 'Supco 88' on all jobs: sealed units, blower motors and any size compressor.

"Now all my men carry 'Supco 88' with them, they are able to do 40% more calls. I never dreamed so many calls could be marked complete without hiring additional help for the summer. It's terrific!"

Contact your local jobber or write to:  
SEALLED UNIT PARTS CO., Inc., 261 East  
161st Street, New York 51, N.Y.

Circle No. 98 on Reader Service Card  
FEBRUARY, 1956 • COMMERCIAL REFRIGERATION



**REVIEW OF SALES** and promotion programs for 1956 on its Ice-Bay automatic ice making equipment occupied representatives of Lipman Div., Yates-American Machine Co., at a recent meeting at the factory in Beloit, Wis. Seated here are Robert T. Hansen, national sales manager, and Milton L. Lindenberg, development engineer. Standing are district sales managers Alfred E. Zygiel, Edward L. Johnson, Wayne Maddix, and Frank Demes.

#### WEATHERTRON RETAILER APPOINTED BY GE

Mayo & Lytle Inc., Metuchen, N. J., has been appointed as a retailer for Weathertron heat pumps by the General Electric Co.

**WITT Zone Air**  
ROOM UNIT  
AIR CONDITIONER



**For New and Old Construction**

"Miraculously Quiet" Zone Air, ideal for hotels, motels, hospitals, offices and other applications where silence is essential. No costly duct work—no tearing out partitions in existing buildings—simply connect pipes from unit to a cooling or hot water system.

Used with direct expansion, combination heating and cooling with water or direct expansion and steam—individual control. 14 sizes: 300 to 1200 CFM. Concealed or cabinet type models.

Write for information  
A. H. WITT COMPANY  
940 N. Sycamore Av., Los Angeles 38  
OVER 30 YEARS  
RELIABLE SERVICE

**WITT Oils**

Circle No. 100 on Reader Service Card  
& AIR CONDITIONING • FEBRUARY, 1956

#### JANITROL EXPANDS TRAINING SCHOOLS

The annual series of service schools, conducted by the Janitrol Heating & Air Conditioning Div. of Surface Combustion Corp. has been extended to 12 classes for 1956.

In addition to the regular gas and oil heating schools, a new series of six one-week schools on summer air conditioning will be offered. Cooling classes will feature instruction on heat gain calculation, layout, application and sales techniques.

Starting dates for the 1956 series of schools are as follows: heating—Feb. 13, Mar. 12, Apr. 9, Apr. 23, May 7 and May 21; cooling—Feb. 20, Mar. 5, Mar. 19, Apr. 16, Apr. 30, and May 14.

#### UNARCO RAISES PRICES ON "ROYAL-AIRE" LINE

A price increase of approximately 10% on the Union Asbestos & Rubber Co.'s "Royal-Aire" line of self-contained, water-cooled, packaged air conditioners has been announced by R. M. Anderson, sales manager of the company's Cooling Div.

Anderson said he anticipated price boosts of 5 to 10% could be expected soon on the rest of the company's line of air conditioning equipment.



want to get  
inside a  
hermetic  
unit?



there's nothing  
easier...or  
less expensive  
...than an  
Access Tee



**Superior**  
valve & fittings co.  
pittsburgh 26, pa.

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121



DO YOU KNOW WHY

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MAGAZINE WITHOUT

CHARGE TO YOU?

## BECAUSE YOU QUALIFY!!

***Only the BEST  
are chosen!***

***Only the BEST  
editors are chosen!***

***Only the BEST  
articles are chosen!***

You have been chosen to receive COMMERCIAL REFRIGERATION & AIR CONDITIONING because you're an important factor in the merchandising, sales, installation and servicing of air conditioning and refrigeration equipment in your community. Your local air conditioning and refrigeration wholesaler **pays us** for your subscription.

COMMERCIAL REFRIGERATION & AIR CONDITIONING readers are hand-picked, carefully selected by progressive air conditioning and refrigeration wholesalers — strictly on the basis of a company's activity in this industry and your position in the company. THAT'S FRANCHISE CIRCULATION.

The editorial staff of COMMERCIAL REFRIGERATION & AIR CONDITIONING is headed by men of long experience . . . men who are recognized as authorities and specialists in this field. Each is chosen for his specific knowledge of one phase or another in it.

Editorial material is carefully planned and presented to help our readers do a better job and make more profits.



**Commercial Refrigeration & Air Conditioning**

1240 ONTARIO STREET • CLEVELAND 13, OHIO

## WEATHER FACTORY . . .

Continued from page 101

midities from 10 to 90%. The chamber permits simultaneous readings to be taken every second to show responses of thermostats and other control devices under various conditions of humidity, relative humidity, pressure, radiant and ambient temperature, and at various thermostat cycling speeds. Fast-acting thermo-couples or thermistors, venturi tubes and electronic, hair hygrometer or carbon humidity sensing elements provide accurate data simultaneously at various points in the test chamber. Data is recorded on a Brown 16-point synchro-print recorder.

Honeywell's humidity studies have resulted in the production of what is said to be one of the most sensitive humidity sensing elements known today. It is a small square of plastic on which is embossed a printed circuit of hygroscopic salt. It is claimed to be so sensitive that a teaspoon of water

in an ordinary room will change the circuit's electrical resistance. Originally designed for humidity control in homes and commercial buildings, the tiny device has been adapted to moisture control in to-



**TWO-SPHERE** radiometer is shown being used in the company's research center to study effect of mean radiant temperature on human comfort.

bacco curing and grain drying, detection of moisture in stored materials such as "moth-balled" military equipment, and to the control

## AIR-COOLED SUMMER CONDITIONER BY JANITROL

### Something New In Remote Condenser Units!



**EXCLUSIVE NEW TOP-EXHAUST COMPRESSOR CONDENSER . . .** cools more efficiently. Circulates cooler ground air over condenser, exhausts it at top. Smartly-styled, a beauty in any yard!



**ALUMI-FIN EVAPORATOR . . .** made for installation in either horizontal or vertical position. Features fast drain-off of condensate to minimize re-evaporation.

It's compact, quiet, quality-engineered and built to do away with callbacks, complaints and service headaches! Uses no floor space—cooling evaporator section mounts in duct; compressor-condenser section goes outside. Needs only air and electricity for operation. Ask your Janitrol representative to tell you more about it.



**Amazing Cooling Efficiency!**  
Delivers cool, refreshing air even with outside air temperatures up to 125°F. Available 2, 3 & 5 ton capacity models.

**Join The Janitrol Profitmakers**  
Cash in on Janitrol's Complete Line of Air-Cooled and Water-Cooled Summer and Year 'Round Conditioners!

**NOW—CALL YOUR JANITROL REPRESENTATIVE, or write for full Air-Cooled Conditioner Details!**

**Janitrol**  
HEATING AND AIR-CONDITIONING  
DIVISION

SURFACE COMBUSTION CORPORATION  
Columbus 16, Ohio

In Canada: Moffat Heating and Air Conditioning  
Division of Moffat's, Ltd., Toronto 15.

Circle No. 101 on Reader Service Card

## Let's Get Acquainted! The New MULTI-SIZE • RIGID SADDLE

### TAPALINE

One Valve Fits All 3 Tube Sizes

1/4" — 5/16" — 3/8"

**\$1.75** each

Yes, this is the one valve that fits all 3 tube sizes. Rigid saddle prevents slipping . . . no special tools needed for installing. Taps the line quickly for purging, adding gas and checking pressures. Save 20% . . . clip the coupon below and take it to your jobber.

#### SPECIAL INTRODUCTORY OFFER!

**20% DISCOUNT—SAVE 35¢**

Bring this coupon to your jobber  
Only One Valve Per Coupon

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ JOBBER \_\_\_\_\_

**Mechanical Refrigeration Enterprises**  
5735 Cahuenga Blvd. North Hollywood, Calif.



of moisture in solvents used in commercial dry cleaning.

This element and others, including new carbon types, continually undergo special aging tests under various temperature and humidity conditions. They are also tested with a newly-developed atmosphere chamber patterned after the one used by the U.S. Bureau of Standards. The chamber enables Honeywell's scientists to duplicate any weather condition found anywhere in the world. Sensitive controls make it possible to regulate temperature to .01 F, and dewpoint to .10 F, over a range from minus 60 F to plus 150 F. Relative humidity can be changed almost instantaneously and the chamber is now being equipped to duplicate atmospheric pressure from below sea-level to above 50,000 ft.

Another valuable tool in heat transfer and humidity control research is company-developed "two-sphere radiometer", an instrument capable of measuring the mean radiant temperature of a room independently of air temperature and air velocity effects. Surveys in typical homes indicate that radiation effects alone vary enough with position in most houses to cause human discomfort even though homogeneous and constant air temperatures are maintained.

Fundamental information being obtained by Honeywell scientists on these and other such subjects is expected to have far-reaching effects on the future of human discomfort, home construction and home heating, and on the operation of hundreds of American businesses and industries.

#### COOL PLANT . . .

*Continued from page 102*

fumes, which must be expelled. Hoods directly above the stereo machinery pick up these fumes and carry them outside through a secondary system of ducts.

Similarly, objectionable fumes caused by etching baths in the engraving department are exhausted through a separate ventilating arrangement which is tied in to the overall ventilation system.

The office and advertising de-

## Calendar of Industry Conventions

March 12-16	Natl. Electrical Mfgs. Assoc.	Chicago, Ill. Edgewater Beach Hotel
March 18-21	American Society of Mechanical Engineers (Spring Meeting)	Portland, Ore. Multnomah Hotel
April 19-21	Gas Appliance Mfgs. Assoc.	White Sulphur Springs, W. Va. The Greenbrier
May 7-9	Air-Conditioning and Refrigeration Institute	Hot Springs, Va. The Homestead
May 7-11	National Restaurant Assn. (Convention-Exposition)	Chicago, Ill. Navy Pier
May 15-18	Mechanical Contractors Assn. (Heating, Piping & Air Cond. Contractors Natl. Assn.)	Louisville, Ky. Kentucky Hotel
May 22-25	Natl. Warm Air Htg. & Air Conditioning Assn. (Directors, Tech. Conference)	Chicago, Ill. Edgewater Beach Hotel
June 3-6	American Society of Refrigerating Engineers	Cincinnati, Ohio
June 4-7	Edison Electric Institute	Atlantic City, N.J.
June 11-15	21st National Oil Heat and Air Conditioning Exposition	New York City Coliseum
June 17-21	American Society of Mechanical Engineers (Semi-Annual Meeting)	Cleveland, Ohio Hotel Statler
June 18-20	American Society of Heating and Air Conditioning Engineers (Semi-Annual Meeting)	Washington, D. C.
June 25-29	American Institute of Electrical Engineers	San Francisco, Calif.

parts of the newspaper were designed for comfortable conditions, figuring 12 cfm per person of outside air.

Photographic laboratories of the newspaper were designed to provide no outside circulation of air, but to use 100% of outside air. The system in this department is also connected and operated in conjunction with an exhaust system. In this manner, the fumes arising in the photo developing process are dissipated to the outside atmosphere.

W. R. Reed, editor and publisher of the *Gazette*, says he believes that complete newspaper plant air conditioning is a sound economic practice. This applies as much to the mechanical departments as to the editorial and advertising departments. Highly skilled workers employed in the mechanical departments gain in both efficiency and morale when working conditions are comfortable. This means higher production, fewer mechanical errors, and a noticeable drop in employee turnover.

#### "WET HEAT" MAKERS SHOW COOLING GAINS

Increasing evidence of the invasion of the summer cooling field by manufacturers of steam and hot water heating equipment who comprise the membership of the Institute of Boiler & Radiator Manufacturers was offered at the Institute's 40th semi-annual meeting in Absecon, N.J.

Although no figures are available for sales of summer cooling and air conditioning systems used in combination with hot water heating, it was reported by Robert E. Ferry, general manager of IBR, that while only 7 member firms offered such equipment in 1954, nearly three times that number were producing it during 1955.

Four basic types of cooling equipment are being manufactured by these firms, it was pointed out. These types are: (1) Room convector units which cool as well as heat and use the same piping system for chilled and hot water; (2) baseboard units which cool and heat using the same piping; (3) convectors which cool only and operate on a piping system separate from hot water or steam lines; and (4) centralized air cooled units installed separately from the heating system.

BUY FROM YOUR  
REFRIGERATION WHOLESALER



## You Can't See a Crippled Heart

She doesn't use crutches, and, except for a drawn and listless expression, looks very much like any other little girl. But she is crippled. She has a crippled heart—the kind of disability you can't see.

And it may surprise you to learn that the tragedy of congenital heart disease affects more than 500,000 children of school age in the United States. For them, as for people of all ages, heart disease is a leading health problem.

Fortunately, medical research has scored dramatic victories in prevention, care and treatment of the heart disorders of young people. Some congenital heart defects, for example, now yield to surgical correction. Both initial and recurrent attacks of rheumatic fever, fore-runner of rheumatic heart disease, now may be prevented in most cases.

But more research is needed if young hearts are to be saved—the kind of research supported by the Heart Fund. Indeed, the chances of many thousands of children for a full, rich and happy life depend on this research.

### HELP YOUR HEART FUND — HELP YOUR HEART

Send your 1956 Heart Fund contribution directly to your local Heart Association, or to "H-E-A-R-T," care of post office.



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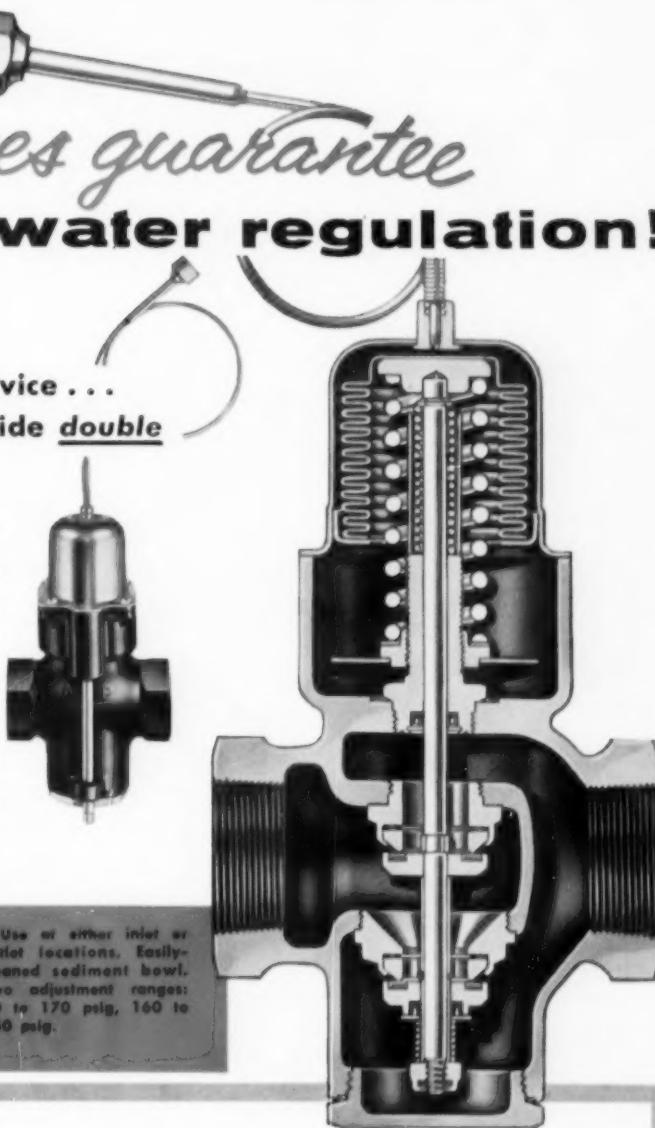
# Exclusives guarantee chatter-free water regulation!

**Model 65 for 1" and 1 1/4" service . . .**

**lifetime ceramic seats provide double  
protection against wear**

Only A-P offers you the lifetime protection of ceramic seats! And in water valves, this means *maximum resistance to wear and erosion resulting from high water velocities*. You eliminate trouble-some pistons . . . you get chatter-free performance, because valve is not affected by inlet pressure.

Add the "any-position" installation . . . the extra compactness . . . easy-cleaning sediment bowl, plus a host of other advanced features — more reasons why Model 65 is right for your next O.E.M. or replacement job!



\* Double port eliminates effect of water pressure on valve — makes it completely chatter-free!

\* Capacity: 65 gpm at 50 psig (1" valve); 80 gpm at 50 gpm (1 1/2" valve). For F12 and F22 service.

\* Use of either inlet or outlet locations. Easily-cleaned sediment bowl. Two adjustment ranges: 70 to 170 psig, 160 to 240 psig.



SELF-CLEANING, self-aligning valve shoe floats on stem. Bevel design assures clean wipe of seat, each valve cycle. Ends unnecessary call-backs.

## Model 65 for 3/8", 1/2" and 3/4" service sliding seat is self-cleaning

And, you get positive shut-off without water hammer! Operation is absolutely not affected by inlet pressure variations. Stays clean despite dirt, lime or sand. You can't beat Model 65 for dependability!

\* Operating ranges: F12 — 65 to 200 psig; F22 — 165 to 300 psig. Completely accessible adjusting stem.

\* Capacity: 3.7 to 22.0 gpm. Wide application range—sizeable, compact, basic-pass-like installation.

\* Extra service tip: Two-ply bellows. All parts in contact with water are non-corrosive. Brass forged body.

Discover the many advantages of Model 65 water regulating valves yourself — order from your wholesaler, or write:

# A-P CONTROLS CORPORATION

2486 N. 32nd Street, MILWAUKEE 45, Wisconsin  
COOKSVILLE, Ontario  
NIJMEGEN, Holland

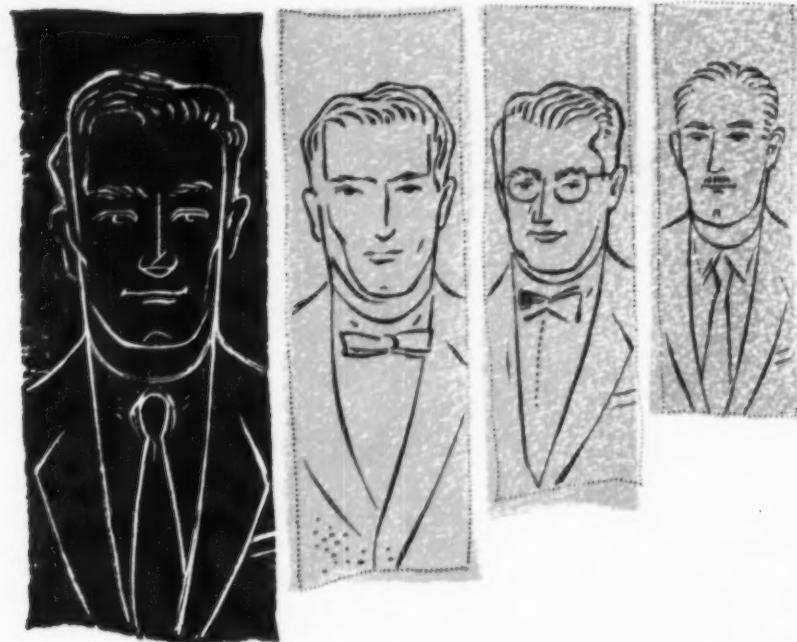
For Export: 13 E. 40th Street, New York 16, N. Y.



**DEPENDABLE Controls**

for Air • Liquids • Gases • Refrigerants

Circle No. 2 on Reader Service Card



## OUR READERS ARE CHOSEN ... *because they qualify!*

Do **you** know why most of our readers get this magazine without charge? How can the publisher **afford** to send the readers this leading magazine every month — without cost to them? Here's why . . .

---

### *Advertisers insist on Quality Readership*

---

It's that simple!

The reader's local refrigeration and air conditioning wholesaler pays us for the reader's subscription to COMMERCIAL REFRIGERATION & AIR CONDITIONING because he knows the readers merchandise, sell, install or service refrigeration and air conditioning equipment; because he knows the readers are responsible for specifying and/or buying this kind of equipment. Natu-

rally, he is willing to spend this kind of money only on the best and most important people in his territory.

COMMERCIAL REFRIGERATION & AIR CONDITIONING readers are **hand-picked**. They are important people in the refrigeration and air conditioning business — they are carefully chosen because of their interest in new and better air conditioning and refrigeration products, equipment and techniques.

---

### *This type of circulation is called Franchise Circulation*

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